Digital Leadership Project

Final Report

by Johnathan Gay, Director, Kentucky Innovation Network at MSU and Project Leader

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Executive Summary

In 2014, Morehead State University, thanks to grant funding from the Kentucky Office for Broadband Outreach and Development, launched the Digital Leadership Project. The DLP was a year-long project aimed at identifying ways that Kentucky can improve broadband adoption and utilization by small to medium sized enterprises in rural Kentucky. The project was staffed by personnel from the Morehead State University Center for Regional Engagement, the Kentucky Innovation Network at MSU, and 9 interns each semester. Interns were recruited from four programs: Computer Science, Computer Information Systems (College of Business), Web Design/Communications, and the MSU Space Science Center space systems program. The program also received special project assistance in the form of a community broadband assessment and web development support, from Northern Kentucky University's College of Informatics and the Kentucky Compact program housed at NKU.

Collectively, interns, MSU personnel and NKU support staff provided approximately 3,500 hours service to Kentucky communities and businesses focused on improving broadband awareness and, especially, utilization. In the process, the small business community in Northeast Kentucky was strengthened, several initiatives were launched that will continue to bring awareness to entrepreneurs and the community at large on the virtues of broadband and its related industries, and a model was created that will allow similar communities to improve adoption of web/information technology services into the future.

Project Overview

Over the course of 2014, Morehead State University, Northern Kentucky University, and the Office for Broadband Outreach & Development have actively worked to promote broadband adaptation on the part of small businesses in Northeast Kentucky. Their effort, named the Digital Leadership Project (DLP), has allowed dozens of small businesses to better leverage the web, has empowered the entrepreneurial community to better utilize web-enabled/digital infrastructure to strengthen their businesses, and created new opportunities for small firms to expand their offerings and identify new opportunities for the future.

The need for this work was first identified by the Office for Broadband Outreach, the Strategic Networks Group, and Michael Baker, Jr. Inc. in a report for area economic development agencies entitled "Improving Broadband Access and Utilization for Businesses in Northeast Kentucky." That report identified weaknesses in the area's business community when it came to broadband adaption and utilization:

- Internet utilization by organizations in Northeast Kentucky is moderately lower than the state average.
- There are significant differences in how various industries utilize the Internet. One of the most important of these is the size of an organization, which impacts an organization's ability to adopt and benefit from more difficult e-solutions. Smaller organizations in the Northeast Region have low levels of Internet utilization when compared to both larger organizations and to the Kentucky average for small organizations.
- Smaller organizations represent a key opportunity to increase utilization levels. This is particularly relevant since organizations with 1 to 49 employees represent 95 percent of organizations in the Northeast Region Organizations outside of metropolitan areas have, on average, significantly lower utilization levels than those in a metro region.
- Organizations outside of a metropolitan area usually do not benefit from the dense network of supports and a large skilled labor pool.

The DLP incorporated these observations into its work. Further, these observations were confirmed on a near-daily basis.

The Digital Leadership Project also worked to better educate the community and local leaders about ways broadband can develop the regional economy. By engaging community leaders and stakeholders, elected officials, and the public at large, the DLP has shown the community new ways to leverage broadband.

Scheme of Work

The Digital Leadership Project had three primary objectives:

1. Build Local and Regional Leadership and Capacity
2. Improving Small Business Utilization of the Internet
3. Improving Broadband to Commercial and Industrial Areas

At the core of the DLP's focus was the effort to improve small business adoption and utilization of broadband and related web services. This aspect of our effort served to link the other two objectives. A fundamental challenge that communities face when attempting to improve broadband is that of the "chicken and the egg"- how do communities grow their high tech economy without the benefit of high speed internet; and how do they justify the costs of high-speed, internet infrastructure without a high-tech economy and a corresponding demand for more bandwidth?

In most cases where initial demand for a public utility is insufficient to justify the costs of supply, the answer is usually government subsidy. Unfortunately, subsidies alone have difficulty bridging the digital divide. *The reason*: subsidies pay for hard, fixed costs of building out the internet, but they cannot pay for the softer costs associated with developing the local economy necessary to justify that public investment in the short run. The Digital Leadership Project focused its energies on developing the local economy. In the future, we believe this effort can serve as a model for other communities attempting to deploy high speed internet where current demand is still sparse.

Scope of Work and Team

Morehead State University, a public, regional university located in eastern Kentucky served as the lead agency. MSU has a service region that consists of 22 Kentucky counties, all but one of which has been designated as Appalachian by the Appalachian Regional Commission. MSU also received assistance from Northern Kentucky University, a regional university located in northern Kentucky. A third partner, the Commonwealth Office of Broadband Outreach and Development, provided funding, technical advice and overall project management support. All work was carried out in the MSU service region in northeast Kentucky. Other stakeholders included the Kentucky Innovation Network at MSU, the Appalachia Regional Commission, the local area development district, the Mayor of the City of Maysville, and many other supporting actors. From the outset, all recognized the need for broadband to be deployed in greater depth across the region. By the end, a consensus had been reached that the community must do more to spur greater adoption on the part of small enterprises.

Building Local and Regional Leadership and Capacity

The Digital Leadership project began planning and building a local regional body in December, 2013. Led by Dr. Jeffrey Clark Marshall, Morehead State University assembled a team of regional leaders that included:

Mike Bryant	Owner, Mill Creek Software
James McGuffee	Chair, NKU Computer Science
Gayle Hilleke	Executive Director, KY Campus Compact
Doug Hoff	USDA Rural Development, Morehead
Josh Farrow	Gateway ADD
Gary Hunt Mayor	Owingsville
Sharon Stavisky	Entrepreneur
Mark Murphy	Small Business Development Center, MSU
Patrick Collins	Humana Inc.
David Cartmell	Mayor, Maysville
Brett Traver	Rowan County Economic Development Council
Terry Ensor	Rowan County Economic Development Council
Bob Albert	Dean, MSU College of Business and Public Affairs

In assembling this team, Dr. Marshall visited and spoke with the local Area Development Districts, County Judge Executives, Workforce Development Agencies, and local city halls. Eventually, this local team would serve as resources to identify clients and the specific communities in which work would occur. Counties worked during this time included Bath County, Montgomery County, Morgan County, Rowan County, Fleming County, Mason County, Lewis County, Boyd County, Carter County, and Lawrence County. Several of these counties in northeast Kentucky, were some of the most broadband deficient county in Kentucky. Every effort was made to identify both areas of need and hubs of progress using this team.

Once the regional body members were identified, every effort was made to keep them advised of team progress and to channel their ideas and contacts into the process. The team held two orientation sessions over the course of the year, one at the beginning of each semester, and multiple break out and one-to-one meetings over the course of the year. These sessions allowed the Digital Leadership Program to put the most focus on developing capacity in the following communities: Mt. Sterling (Montgomery County), Owingsville (Bath County), Morehead (Rowan County), Flemingsburg (Fleming County), Maysville (Mason County), Vanceburg (Lewis County), and Louisa (Lawrence County). Secondary efforts have also taken place in Campton (Wolfe County), Frenchburg (Menifee County), and Inez (Martin County).

In addition to working through the regional lead body and working groups, the DLP also worked to increase overall awareness of broadband capabilities with the greater public. This was accomplished by organizing face to face workshops, two conferences and by utilizing the media. Workshop topics included:

- ✓ Business Model Development (with an emphasis on IT enterprises)
- ✓ Software Development
- ✓ Building an IT Cluster around the MSU Space Science Program
- ✓ Application Development Workshops
- ✓ Business Incubator Basics (emphasis on IT)
- ✓ Broadband Provider Conference
- ✓ Film/Movie Making

Additionally, the DLP supported a series of workshops specifically focused on spurring interest among high school students in IT related enterprises. Because of these efforts two new enterprises were able to launch with partnership support. One, a non-profit called "Rural Up!," focuses on providing coding instruction to middle and high school students. The goal is to engage them in learning how to write computer code. This program has held 7 workshops across the region and has reached more than 150 students. More importantly, because of the support this partnership provided, including providing multiple instructors for each workshop, "Rural Up!" is on a sustainable path.

Similarly, the DLP provided support for a series of workshops aimed at high school students to develop their interest in space science, which has been identified as the key IT industry in the Morehead area. This program, called SpacePrep, offers seminars to local high school students in areas such as circuit board development, robotics, building small scale computer hardware and more. As with Rural Up, because of the support of the DLP, this effort is on track to be sustaining well after the grant.

Together, these various initiatives have connected with the public at large and many of their representatives. They have created awareness of the various capabilities of the regional Universities and the Office for Broadband Outreach and Development. Most importantly, they've created regional leadership capacity to continue growing the digital economy and improving broadband adaptation well into the future.

Improving Small Business Utilization of the Internet

The primary goal of the Digital Leadership Project over the past year has been to improve small business utilization of the internet. Project leadership chose to focus efforts in three broadly defined clusters: web site utilization, customized software development, and the space science industry with an emphasis on IT.

Finding Affordable Talent to Assist Small Businesses in a Rural Area

A prerequisite for improving small businesses utilization of the internet is a highly-skilled eco-system of support-workers who can assist these businesses in making the transition to a digital economy. The cadre of workers required to make this shift includes software developers, web developers, "App" developers and, occasionally, hard ware and systems engineers. Talent such as this is usually lacking in communities where broadband access is poor. Once broadband has been deployed, it still takes time for this eco-system to develop. Simply importing this talent into areas that have only recently received broadband can be incredibly expensive.

The Digital Leadership Project identified one possible solution: use college students in fields such as computer science, marketing (web design), and space systems engineering to fill this gap. While the overall area suffers from a dearth of IT workers, Morehead State University has dozens of students training in those fields. Many are only a semester or two away from graduating and taking highly compensated positions within the

private sector (quite often in communities far away from Northeast Kentucky); however, as college students, these same students are willing to work for hourly rates of around $10.00 per hour.

Moving in the direction of hiring students allowed the Digital Leadership Project to get much greater bang for their buck. After advertising the opportunity across campus and interviewing a number of students, 9 interns were selected from fields as diverse as marketing (web design), computer science, computer information systems (business), and space science/space systems engineering. These students understood their work would be three-fold: to increase community awareness of broadband related opportunities, to assist in the development of leadership capacity by working within specific working groups, and, most importantly, to directly support small businesses.

In order to move in this direction, DLP was to conduct worker assessments and mandate training to help student workers overcome their skill-deficits. Training occurred both in class and off site (often in the students' dorm rooms late into the evenings.) Training consisted of computer languages, web design, user interfaces, graphic design and more. Initially, the DLP focused on training students for every contingency. Later, it was decided that training students on an ongoing basis would be optimal. With the help of a local software developer and graduate of MSU, access to a training resource for a rapid response to workforce needs was established for whenever students hit a challenging scenario involving domain expertise.

Identifying Early Adaptor Businesses

Part of the challenge in getting small businesses to better use IT services, is finding those industry leaders willing to be early adopters. To accomplish this, the DLP relied heavily on support from the Area Development Districts, area County Judge Executives, local Mayors and, especially, the Kentucky Innovation Network. Together, these organizations provided the DLP with names of prospective businesses and entrepreneurs who were willing to serve as early adopters. These businesses ranged from web development firms to companies actually building small satellites.

Once these businesses were identified, the Kentucky Innovation Network worked to contact these firms and entrepreneurs to identify any specific needs. Quite often, businesses declined the offer of services- even where they were free. Once a business elected to take advantage pf the services offered by DLP, the DLP Working Groups were notified and began providing specific interns to support this project.

Assisting Small Businesses to Adopt Broadband Related Services

The overwhelming majority of this grant's resources were spent in providing intern support to small businesses. These businesses included organizations such as:

Farm-to-table ventures: Despite Appalachia's rich cultural and food heritage, few businesses actually use a web site to promote their enterprises. This prevents all but the most determined tourists from locating these ventures. Another challenge: many view themselves as too small to need such services. The Digital Leadership Project worked to begin the initial phases of developing web sites for four such ventures - including one for a regional food processing and sales operations that will reach dozens of other agri-businesses.

Web site development for small businesses: Working through the DLP Rowan County Working Group, a number of local ventures and community organizations have been able to receive web design and development services.

Space Science Engineering: One of the most intriguing high-tech opportunities in the region, when it comes to IT, is the space science/space systems arena. Morehead State University has one of the nation's leading academic programs in space systems engineering. Students don't simply learn the fundamentals of space; they learn how to place hardware in space. In order to grow a dynamic, IT based industry around this exciting cluster, the DLP created a Space Science Working Group. This group worked to develop leadership capacity and pioneer ideas such as

business incubators and IT hubs. It also identified space systems entrepreneurs in the area to support. Four small businesses received support from DLP interns.

Software Development for Small Businesses: The DLP also provided software development support to local companies. One of the more intriguing examples of this effort was to support a network of drug rehabilitation facilities located across the region. The facilities, located in Floyd County, Montgomery County, Boyd County, Fleming County, Lawrence County and more work in tandem with one another to provide support for struggling addicts. They face a critical challenge: reaching the potential end-user. Sadly, their centers often go unknown to the very people who need them the most. Working with these centers, the Digital Leadership Project was able to develop software that would "crawl" the web and allow these centers to identify persons who were potentially in need of their services. Once such a person was identified, the software program automatically searched the web for their addresses, selected the most likely individual address from the many on the web, and generated a customized, discrete letter addressed to the individual in question along with a brochure.

Annual Conference

In November, the Digital Leadership Project held what is intended to be an annual conference focused on improving broadband adoption. This event touched on topics such as:

*Coding for kids: How to create the next generation of digital leaders
*IT and the Aerospace Economy: How can Morehead utilize the World Wide Web to strengthen its aerospace economy?
*Bitcoin: How will digital currencies affect the growing web-based economy?
*Farm to Table: What role do websites play in growing the agri-business economy?

Improving Broadband to Commercial and Industrial Areas

Data collected by Kentucky's Office of Broadband Outreach and Development suggests that the majority of the Commonwealth has access to broadband Internet. However, the exact coverage in many communities is unknown. The DLP, through its NKU Team, conducted a study that tested and mapped available wireless broadband Internet access in the city of Maysville, KY. Using special networking tools, the team mapped available broadband networks throughout the city, testing both signal strength and Internet speed, and then went about documenting the discoveries. This project also had the support of the Kentucky Campus Compact and the Mayor of Maysville, David Cartmel.

By creating a more accurate map of Maysville's broadband access, the DLP was able to help the city identify areas in need of additional service. Working closely with city officials, NKU presented the findings to the Mayor who then used the data to develop a strategy to improve local broadband access to promote economic development.

This effort created a model for how broadband can be rapidly assessed and improved in a community. By creating the diagnostic testing mechanisms as well as a treatment protocol, the DLP has established the methods by which towns and counties can become wired for business.

Conclusion: Recommendations for Continuing to Improve Small Business Utilization of Internet

Small businesses face many challenges in adopting web services and related IT support for their businesses. Chief among them: knowledge of the benefits, regional service providers with whom they have trust, and expense. To overcome this challenge requires targeted, cost-effective subsidization supported by or offered through local partners. The Digital Leadership Project, thanks to the support of the Office for Broadband Outreach and Development, and with in-kind support from Morehead State University and the Kentucky Innovation Network, can serve as a model for this type of support. The critical ingredients are as follows:

1. Subsidization of IT/web based services is a necessity for many small businesses to adopt IT.
2. Community buy-in, particularly on the part of economic development entities and local elected officials, is critical for success.
3. College students are the most convenient labor pool to assist these enterprises.
4. Students must be carefully monitored to ensure maximum return on investment.

APPENDIX I

MoSU Broadband Leadership Team

REGIONAL LEADERS

NAME	POSITION	EMAIL	PHONE
J. Marshall	Executive Director, CRE	j.marshall@moreheadstate.edu	606.783.9388
Johnathan Gay	Director, Innovation Network	jgay@kyinnovation.com	859.797.5759
Mike Bryant	Owner, Mill Creek Software	mike@millcreeksoftware.com	
James McGuffee	Chair, Computer Science	mcguffeej1@nku.edu	859.572.7931
Gayle Hilleke	Executive Director, Ky Campus Compact	execdirector@kycompact.org	859.250.9591
Doug Hoff	USDA Rural Development, Morehead	douglas.hoff@ky.usda.gov	606.784.6447
Josh Farrow	GIS, Gateway ADD	joshua.farrow@ky.gov	606.780.0090
Gary Hunt	Mayor, Owingsville	gary.hunt@roadrunner.com	606.674.6361
Sharon Stavisky	Client	sstaviski@rsdatasystems.com	606.759.7141
Josh Farrow	GIS, Gateway ADD	joshua.farrow@ky.gov	606.780.0090
Mark Murphy	SBDC	m.murphy@moreheadstate.edu	606.783-2895
Patrick Collins	Humana/Cancer Foundation	jpatrickcollins@gmail.com	
Mick Fosson	Director, Innovation Network	mike.fosson@kctcs.edu	606.326.2239
Kim Jenkins	SBDC @ Ashland	k.jenkins@moreheadstate.edu	606.783.8011
David Cartmell	Mayor, Maysville	dcartmell@maysvilleky.net	606.584.5371
Mark Murphy	SBDC @ Morehead	m.murphy@moreheadstate.edu	606.783-2895
Brett Traver	Rowan County EDC	brett.traver@roadrunner.com	606.784-5874
J. Marshall	Client	j.marshall@moreheadstate.edu	606.783.9388
Johnathan Gay	Kentucky Innovation Network	jgay@kyinnovation.com	606.783.9536
Terry Ensor	Morehead-Rowan County Economic Development Council	terryensor971@gmail.com	
Bob Albert	Dean, MSU College of Business and Public Affairs	r.albert@moreheadstate.edu	606-783-5158
Kevin Bourne	VISTA	kpbourne87@gmail.com	502-500-1365
Caroline Patton	VISTA	carolinepatton@live.com	561-254-2834

WORKING GROUPS:

SPACE SCIENCE INFOTECH GROUP			
Name	**Title/Organization**	**Email**	**Phone**
Ben Malphrus	Chair, MSU Space Science Center	b.maphrus@moreheadstate.edu	606-783-2212
Robert Twiggs	Space Science Center	rjtwiggs@gmail.com	606-783-9594
Kevin Brown	Space Science Center	kz.brown@moreheadstate.edu	606-783-5371
William Roach-Barrette	Broadband Intern	wroachbarrette@icloud.com	606-359-2963
Cadence Payne	Broadband Intern	cbpayne2@moreheadstate.edu	502-415-2681
Murphy Stratton	Broadband Intern	mcstratton@moreheadstate.edu	859-421-3222
Kristen Royse	Broadband Intern	knroyse@moreheadstate.edu	606-548-1064
David Mays	Broadband Intern	davidscottmays@icloud.com	606-356-3966

APP SOFTWARE DEVELOPMENT GROUP			
Name	**Title/Organization**	**Email**	**Phone**
Mike Bryant	Owner/Mill Creek Software	mike@millcreeksoftware.com	606-272-2894

LAWRENCE COUNTY WORKING GROUP			
Name	**Title/Organization**	**Email**	**Phone**
Edwin Orange	Mowered/Hoperope Drug Project	edwin@edwinorange.com	502.320.1076
Kevon Jackson	Broadband Intern	kzjackson@moreheadstate.edu	414-71-3990
Daniel Grieder	Red Dress Marketing	BeSeen@RedDressSolutions.com	888-305-6455
Daniel Yeary	Broadband Intern	dayeary@moreheadstate.edu	(606) 407-0323
Zane Dixon	Broadband Intern	zhdixon@moreheadstate.edu	(937)515-8972

APPENDIX II

Orientation Session Webinars:

March 12 and May 29

Name	Description	Email
William Roach-Barrette	Student/Broadband Intern	wroachbarrette@me.com
Brett Traver	Executive Director, Morehead-Rowan County Economic Development Council	brett.traver@roadrunner.com
Lowell B. Jamison	Bath County Judge Executive	annlykes2003@yahoo.com
William Bates	Director of Client Services, Michael Baker Engineering, Inc.	wbates@mbakercorp.com
James L. Gallenstein	Mason County Judge Executive	jgallenstein@masoncountykentucky.com
Gary M. Hunt	Mayor of Owingsville, KY	owingsville@windstream.net
Gayle Hilleke	Executive Director, Kentucky Compact	gayle.hilleke@kycompact.org
David Perkins	Mayor of Morehead, KY	dperkins@cityofmorehead.net
David Cartmell	Mayor, Maysville	dcartmell@maysvilleky.net
Jeffrey Marshall	Director, MSU Center for Regional Engagement	j.marshall@moreheadstate.edu
Mike Bryant	Mill Creek Software	mike@millcreeksoftware.com
Anthony T. Ruckel	Lewis County Judge Executive	lewiscountyjudge@yahoo.com
Jim Nickell	Rowan County Judge Executive	jnickell50@yahoo.com
Johnathan Gay	Director, Kentucky Innovation Network at MSU	j.gay@moreheadstate.edu
Vicci Lewis	Administrative Support, MSU	vqlewis@moreheadstate.edu
Chris McGlone	Mayor of Vanceburg, KY	vanceburgmayor@gmail.com
Mark Murphy	General Management Consultant, SBDC	m.murphy@moreheadstate.edu
J. Patrick Collins	Humana	jpatrickcollins@gmail.com
Robin Proctor	Office of Broadband Outreach and Development	robin.proctor@ky.gov
Douglas Hoff	USDA Rural Development	Douglas.hoff@usda.gov

APPENDIX III

MONTHLY PROGRESS REPORTS
FOR INTERNS, NKU & HQ

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JANUARY 2015 REPORTS

HQ: Over the month of January Headquarters continued to work with OBOD and William Bates to finalize and refine project description. Multiple phone calls w/ Gayle Hilleke of NKU and her team. Coordinated hiring of interns and arranged services of trainer for the interns. Coordinated with Mike Bryant the details of the training and arranged for space for their initial training. Prepared initial intern assignments; Traveled to Mason, Breathitt, Rowan, Montgomery and Lawrence County to identify potential clients. Spoke with the various working group leaders about how the interns would be working.

Ensured budget accounts were capitalized and discussed operating procedures for accounts and finalized details for interns with both HR and Work-Study office so they could begin working in Feb.

Met or called each member of the leadership team. Reached out to the Area Development Districts. Meetings w/ Dr. J. Marshall about the proposed scheme of attack. Exchanged multiple emails with OBOD and Bates.

Total Hours: 50

NKU: Continued working w/ Morehead to establish their scheme of work. NKU selected interns who reported to James Maguffee. Reached out to Maysville and met w/ the Mayor to discuss needs of community. Exchanged emails w/ MSU, Maysville and others to finalize scheme of operations. Finalized contract details and coordinated with accounting the budgetary aspects.

Total Hours: 20

Intern Reports: None. Interns begin Feb. 2014.

FEBUARY 2014 REPORTS:

INTERN REPORTS: FEBRUARY, 2014

Tiaunda Ramsey

- 2/12/2014 Initial meeting 1.5 hours
  Reading emails/getting to know Basecamp - .5 hours
- Total Hours Worked: 2

Over the past two weeks, I've worked a great deal on tutorials. I've practiced these languages as well. I've also spent some time working on finding a solution to the problem of iOS/Android App Development. .

- Tuesday 2/18/2014: 3 hour PHP tutorial (A portion was bugged and took a long time to resolve.
- Wednesday 2/19/2014: .5 hours working on iOS/Android App Development issue, .5 hours coding with PHP
- Thursday 2/20/2014: 2 hours HTML tutorial.
- Friday 2/21/2014: 1 hour coding HTML
- Saturday 2/22/14: 2 hours working on iOS/Android App Development issue, .5 hours coding PHP
- Sunday 2/23/14: .5 hours working on iOS/Android App Development issue
- Thursday 2/27/14: .5 hours Discussing Patrick Collins meeting/Reading E-mails for the pay period/Conversing with Kamille about working on iOS/Android App Development issue/Using Basecamp

Total Hours Worked: 10.5

Total Hours Worked: 12.5

Kevon Jackson

- 2/15/2014 Initial meeting, Basecamp 2.5 hours

- 2/17/14 Read "Clusters, Convergence and Economic Performance,"– 1 hour
  Worked with Wordpress and Drupal – 4 hours
- 2/18/14 Read "Clusters and Entrepreneurship." – 1 hours
  Worked with Joomla – 2 hours
- 2/19/14 Worked with Ektron CMS9 – 4 hours
- 2/20/14 Worked with BPMN2.0 – 1 hour
- 2/21/14 Trello-3 hours

read and writing email – 1.5 hours

Total Hours Worked: 20

Aaron Ballard

Tutorials on Code Academy

- 2/12/2014 Initial meeting 1.5 hours
- 2/18/14 Worked on ruby tutorial – 2 hours
- 2/19/14 Worked through half of the HTML/CSS tutorial on Code Academy, did the full PHP tutorial, and did 1.25 hours of research on broadband in the area – 5 hours Worked on XYZ – 3 hours
- 2/20/14 Worked on XYZ code – 3 hours
- **Total Hours Worked: 14.5**

Kamille Onorato

- 2/15/2014 Initial meeting, Basecamp 2.0
- 2/17/14 Checking emails/Basecamp - .5 hours
  Completing HTML tutorials – 2 hours
- 2/18/14 Completing CSS Tutorials – 2 hours
- 2/19/14 Checking emails/Basecamp - .5 hours
  Researching Bitcoins - .5 hours
- 2/20/14 Researching Bitcoins – 2 hours
- 2/21/14 Completing PHP Tutorials- 2 hours
- 2/24/14 Checking emails/Basecamp - .5 hours
- 2/26/14 Finishing research, typing up report on Bitcoins – 2.5 hours
- 2/27/14 PHP/SQL w3schools – 2 hours
- 2/28/14 Checking email/Basecamp - .5 hours

Total Hours Worked 26.5

Amber Dillon

- 2/12/2014 Initial meeting 1.5 hours
- Amber Dillon
- 2/21/14 3:00pm-5:40pm PHP tutorials – 2.75 hours
- 2/24/14 1:00pm-3:30pm HTML tutorials – 2.5 hours
- 2/25/14 12:10pm-3:40pm C tutorials- 3.50 hours
- 2/26/14 10:00am-2:00pm PHP, HTML, C tutorials – 2.00 hours
- 2/27/14 2:00pm-3:15pm PHP tutorials – 1.25 hours
- 3:30pm-4:00pm Set up meeting with Ellie Roberson via email - .50 hours
- 2/28/14 9:00am-9:50am PHP tutorials- 1.00 hour

Total Hours Worked – 14.5

Murphy Stratton

Week of: Feb. 10th- Feb. 14th, 2014

I am currently working on learning the "Business Cluster" concept as well as researching the broadband initiative and working on the digital CricketSat with Bob Twiggs, CEO of Teton Aerospace.

- Wednesday 2/12/2014: 1 hour and 45 minute start-up meeting.
- Thursday 2/13/2014: 2 hours researching business cluster concept.
- Friday 2/14/2014: 2 hours researching business cluster and creating Tech10 account.

I was able to work 5.75 hours this week.

I am currently working on learning the "Business Cluster" concept as well as researching the broadband initiative and working on the digital CricketSat with Bob Twiggs.

- Sunday 2/23/2014: 5 hours doing code tutorials.
- Monday 2/24/2014: 3 hours doing code tutorials. 2 hours on digital cricketsat.
- Wednesday 2/26/2014: 3 hours working on digital cricketsat. 2 hours working on codes.
- Friday 2/28/2014:5 hours on digital cricketsat/working on code.

I was able to work 20 hours this week.

Total Hours Worked: 25.75

William Roach Barrette

- 2/12/2014 Initial meeting and Basecamp 2 hours
- 2/13/-2/15/2014 Teton Aerospace 8 hours

Total Hours Worked: 10

- Designed and built flat sat
- located and began work on ground station
    - found and tested ground station radio
    - located suitable computer for testing
    - installed necessary operating system on computer
      currently having a little trouble getting Ubuntu and Windows to work well together after wiping Ubuntu initially to opt for dual OS configuration

● Located possible dictionary plug in for use with IOS app
● Brushed up on and studied: Javascript, HTML and Python
Time worked

- 2/16/14 - Worked on Javascript and HTML Tutorials and started researching the dictionary plugin for company 5 Hours
- 2/17/14 - Found Suitable dictionary plug in and began trying to research it to determine if it was of use to company 5 Hours
- 2/19/14 - Drilled through various tutorials and began work on flat sat 5 Hours
- 2/20/14 - Drilled a few more tutorials and looked through documentation on dictionary plugin, need to do more research. 5 Hours
- 2/23/14 Worked on first revision of flat sat
- 2/24/14 Worked with Jeff and Bob Twiggs, CEO of Teton Aerospace to make a better flat sat
- 2/26/14 Gathered pieces for ground station and computer setup and began work on computer
- 2/27/14 - Attempted to sort out operating system issues with computer but had to first extract data from computer 2 Hours
- 2/28/14 - Installed Windows on computer and tested ground station, also began work on mobile ground station for possible work in future rocket launch 5 Hours

Total Hours Worked: 40

David Mays

● 2/15/2014 1.5 hours initial meeting

Total Hours Worked: 1.5

HQ Report: Began work w/ interns. Coordinated their schedules. Ensured each was being paid and set up process for them to track hours. Met w/ interns and ensured orientation and training. Assigned tutorials where needed and self-assessments. Navigated payroll and ensured hours

were properly reported. Reviewed and approved hours. Spoke to the various entrepreneurs to begin the students working. Reached out to NKU to see their scope of work. Approved their project in Maysville.

Total Hours: 50

NKU Report: Finalized intern process and team to begin work in Maysville. Met w/ Mayor Cartmell to discuss ways NKU could support their broadband needs. Sought and received project approval from MSU. Project description: mapping available broadband networks.

Total Hours: 20

MARCH 2014 REPORTS:

INTERN REPORTS

Tiaunda Ramsey

March 5 – March 14, 2014

- 3/5/2014 – Met with Patrick/Becoming familiar with Trello – 1.5 hours
- 3/6/2014 – Business Model Canvas workshop – 3.75 hours
- 3/7/2014 – Emailed Daniel (Fancy Hands) - .25 hours
- 3/8/2014 – Reviewed SRS example - .75 hours
- 3/10/2014 – Conference call with Patrick, Reviewed Mind Map – 1.75 hours
- 3/11/2014 – Call with Daniel; SRS Doc Meeting - 3.0 hours
- 3/12/2014 – Call with Patrick; SRS Meeting; Wireframe Design – 4 hours
- 3/13/2014 – Posted about Wireframe; Posted to and Checked Basecamp for team – 1.0 hours
- 3/14/2014 – Checked emails; checked Trello and moving/organizing cards; Checked Basecamp – 3 hours

March 15-March 21, 2014

- 3/16/2014 – Prepared resume for Fancy Hands (Dan) – 2 hours
- 3/18/2014 – Google Hangout with Dan/Ed, Researched Voice Video Chat API – 2.25
- 3/19/2014 – Explored Squarespace, Organized meeting with Edwin, Google Hangout with Ed/Dan, Conference Call with Patrick, Explored AERIS, Discussion with group – 5 hours
- 3/20/2014 – Planning with Ed, Updated Kami, SRS Edits – 3 hours
- 3/21/2014 – Planning with Ed, Google Hangout with Ed, Explored Chat API for website – 1 hour
- 3-23-2014 – Watched business video on YouTube – 1 hour
- 3/24/2014 – Conference Call with Pat, Reviewed new SRS – 40 minutes
- 3/25/2014 – Google Hangout with Dan –
- 3/26/2014 – Looked over new Trello boards (Dan/Ed) - .50 hours
- 3/27/2014 – HTML for Dan, Logo discussion/feedback/polls/updates- 2.5 hours

Other: Emails, Checked Trello/Google IM Chats with Ed and Dan – 2.5 hours

- **Total Hours Worked: 19**

Kevon Jackson

March 3 – March 7

- 3/3/14 Trello – 15 minutes
- 3/4/14 Trello - 30 minutes
- 3/5/14 Meeting with Patrick Collins – 45 minutes
- 3/6/14 Business Model Canvas workshop – 3/5 hours
  NDA – 30 minutes
- 3/7/14 SRS document – 1.5 hours
  Dots game – 4 hours
  Read and writing emails – 1 hour

March 10-March 14

- 3/10/2014 Conference call with Patrick; Meeting with other interns; Worked with Dots game and Trello – 4.25 hours
- 3/11/2014 – Meeting with other interns; Worked on Trello – 2.75 hours
- 3/12/2014 – Conference Call with Patrick; Meeting with interns; Worked on Dots game – 3 hours
- 3/13/2014 – Worked on Wireframe for Patrick – 1 hour
- 3/14/2014 – Worked on Treeo; Read and replied to emails – 1.50 hours

Total Hours Worked: 24.5

Kamille Onorato
March 5-March 15, 2014

- 3/5/2014 – Met with Patrick - .75 hours
- 3/6/2014 – Business Model Canvas workshop; Emails for TMBCF; Reviewed SRS Document – 5 hours
- 3/7/2014 – Typing Up Meeting Summaries - .75 hours
- 3/10/2014 – Checked Basecamp; Trello, Emails; Conference call with Patrick; Posted on Basecamp/Trello; SRS Document with other Interns – 3.75 hours
- 3/11/2014 – SRS Document with other Interns – 2.50
- 3/12/2014 – Conference Call with Patrick; SRS Documents with other Interns, Elected Officials Wireframe – 2. 5 hours
- 3/13/2014 – Checked Trello - .50 hours
- Additional Hours – Checked emails and Basecamp throughout pay period – 2 hours
- Total Hours Worked: 17.5

March 15-March 31, 2014

- 3/20/2014- Worked on SRS Document and Wire Frames, Emails, Discussed missed Google Handouts with Tiaunda, Reviewed sample documents/API Documentation – 4.5 hours
- 3/21/2014 – Worked on SRS Document and Wire Frames, Called Patrick Collins, Emailed V. Lewis, Checked Trello, Google Hangout with Tiaunda Ramsey, EO – 2.5 hours
- 3/23/2014 – Conference Call with Patrick Collins, Tiaunda Ramsey, Aaron Ballard, Kevon Jackson, Ellie Roberson - .50 hours
- 3/25/2014 – Google Hangout with DG, Tiaunda Ramsey, Aaron Ballard, worked on Database Model for PC with Aaron Ballard, Tiaunda Ramsey, Ellie Roberson, and Kevon Jackson – 2.75 hours
- 3/26/2014 – Worked for DG – 1 hour
- 3/27/2014- Worked for DG – 2.25 hours
- 3/29/2014 – Worked for DG- 3 hours
- 3/31/2014 – Worked for DG – 2 hours
- Additional Hours: Worked communication with other Interns and checking email, Trello, and Basecamp – 4 hours

Total Hours Worked: 22.5

Murphy Stratton

Week of: March 3rd-March 7th, 2014

I am currently working on researching the broadband initiative and working on the digital CricketSat with Bob Twiggs.

- Tuesday 3/04/2014: 1 hour meeting with Bob, 3 hours working on picaxe program.
- Wednesday 3/05/2014: 3 hours on CricketSat circuit. 3 hours on digital cricketsat code.
- Thursday 3/06/2014: 3 hours in Business Plan Concept workshop. 2 hours working on codes.
- Friday 3/07/2014: 5 hours on digital crickets/researching datasheets and circuits..

Intern was able to work 20 hours this week.

March 10 –March 14, 2014
Digital CricketSat

- 3/10/2014 Installing software and drivers—3 hours
- 3/11/2014 Programmed processor -3 hours
- 3/12/2014 Tutorials – 4 hours
- 3/13/2014 Began prototyping circuit – 5 hours
- Total Hours Worked – 15 hours

Total Hours Worked: 35

William Roach Barrette
March 2- March 15, 2014
Rocket Launch/Space Website

- 3/4/2014 – Met with Ellie Roberson and Dr. Twiggs – 1 hour
- 3/5/2014 – Business Model Canvas workshop – 3 hours
- 3/10/2014- Met with Garrett and Dr. Twiggs; Examined components – 5 hours
- 3/11/2014 – Looked over code; Found suitable payload for satellite – 5 hours
- 3/14/2014 – Worked on PCB and adapting new code for new payload – 6 hours
- Total Hours Worked: 20

Total Hours Worked: 20

David Mays
BeakerSat and Ground Station
March 10 – March 14, 2014

- 3/10/2014 – Worked on Ground Station, Flight Cod, Mounting Blocks, IMU Code – 6 hours
- 3/12/2014 – Worked on Ground Station Code, Studied SPI and RFM22B – 5 hours
- 3/13/2014 - Modified BeakerSAT PCB, Began designing Ground Station Version – 5 hour
- 3/14/2014 – Finished PCB Designs; Studied SPI – 4 hours

Total Hours Worked: 20

Shay Hammond
March 9 – March 15

- 3/10/12 – Discussing with Jessi about website and installing WAMP – 4 hours
- 3/11/14 – Becoming familiar with WAMP, creating a Child Theme in Wordpress – 3 hours
- 3/12/14 – Learning more about Wordpress, implementing responsive header/logo on the website – 2 hours
- 3/13/14 – Reading Wordpress tutorials/Genesis Framework and working on the website – 2 hours
- Total Hours Worked: 13

Shay Hammond
March 23 – March 29, 2014

- 3/24/2014 – worked on websites and met with Jessi – 4 hours
- 3/26/2014 – worked on both websites – 4 hours
- 3/27/2014 – worked on both websites – 2.5 hours
- 3/28/2014 – worked on both websites – 2.5 hours

Total Hours Worked: 26

HQ Report: Continued training interns. Coordinated schedules. Tracked and maintained hours. Held business model canvas workshop. Ensured payroll. Monitored and approved pay. Coordinated working groups.
Total Hours: 50

NKU Report: Mapped broadband in Maysville. Coordinated w/ Mayor. Phone calls and emails to MSU. Bi-weekly call in and updates.
Total Hours: 15

APRIL 2015 REPORTS:

INTERN REPORTS

Kevon Jackson
March 31-April 4

- 3/31/2014 – Worked on database - .5 hours
- 4/1/2014 – Worked on Database, Edwin Scraper, Discussion with other interns, worked on Squarespace, Trello, and Edwin HW – 3.5 hours
- 4/2/2014 – Worked on Database, Edwin Scraper, Discussion with other interns, worked on Squarspace, Trello, and Edwin HW – 3.5 hours
- 4/3/2014 – Discussion with other interns - .25
- 4/4/2014 – Read and wrote emails, discussion with other interns – 1.25 hours
- Total Hours Worked: 9 hours

April 7 – April 13

- 4/07/2014 – Discussion between Kami, Tiaunda, Aaron, Eric, and I on BB projects - .25 hour
- 4/08/2014 – Discussion between Kami, Tiaunda, Aaron, Eric, and I on BB projects; Worked on Squarespace, Trello - 1 hour
- 4/09/2014 – Discussion between Kami, Tiaunda, Aaron, Eric, and I on BB projects; Worked on Squarespace, Trello – 1 hour
- 4/10/2014 - Discussion between Kami, Tiaunda, Aaron, Eric, and I on BB projects; worked with Edwin KBA Scraper – 4.25 hours
- 4/11/2014 – Edwin KBA Scraper, read and wrote emails – 5.5 hours
- 4/12/2014 - Edwin KBA Scraper – 4 hours
- 4/13/2014 – Edwin KBA Scraper – 4 hours

April 16-April 30

- 2 hours writing and reading emails
- 8 Hours on Aerospace event
- 4. hours on criminal database
- 1 hour consulting with other interns

Total Hours Worked: 44

Aaron Ballard

April 9, 2014

Wednesday, 4/2/14, 12:00pm-1:00pm, Discussed projects and current progress among interns;

Wednesday, 4/9/14, 12:00pm-1:00pm, Discussed projects and current progress among interns;

Total Hours Worked: 2.0

Kamille Onorato
April 1-April 15, 2014

- 4/1/2014 Work for DG 10:00AM-11:00AM 1hr
- 4/3/2014 Work for DG, Meeting with Kevin Brown at ConsiNet 10:00AM-11:00AM 2:00PM-2:45PM 1hr 45 min
- 4/4/2014 Meeting with Kevin Brown 5:00PM-7:00PM 2hrs
- 4/6/2014 1hr Emails/Trello, 1hr Group, Discussion 2hrs
- 4/7/2014 Work for Kevin Brown at ConsiNet 9:10AM-10:10AM 1hr
- 4/9/2014 Work for Kevin Brown at ConsiNet 9:10AM-10:10AM 1hr
- 4/10/2014 Work for DG 11:00AM-12:00PM 1hr
- 4/11/2014 Work for Kevin Brown at ConsiNet 03:00PM-05:00PM 2hrs
- 4/13 1 hr Emails/Trello 1hr Group Discussion 2hrs
- 4/14/2014 Work for Kevin Brown at ConsiNet 12:00PM-01:00PM 1hrs
- 4/15/2014 Work for 12:00PM-04:00PM Kevin Brown at ConsiNet 05:45PM-7:45PM 6hrs Work for Kevin Brown at ConsiNet

Total Hours Worked: 20.75

Murphy Stratton
March 31-April 5, 2014

- 3/31/2014 – read datasheets, worked with code – 5 hours
- 4/1/2014 – worked on digital cricketsat design in altium, practiced with picaxe tutorials – 5 hours
- 4/2/2014 – researched code, built other prototype circuits – 5 hours
- 4/3/2014 – called people for Aerospace/Industry Day – 1 hour
- 4/4/2014 – worked with processor trying to make it work with code – 4 hours
- Total Hours Worked: 20 hour

April 7 - April 11, 2014

- 4/7/2014 – Working on programming picaxe – 5 hours
- 4/8/2014 – worked on digital cricketsat design
- 4/9/2014 – programming – 4 hours
- 4/10/2014 – programming and design – 5 hours
- 4/11/2014 – worked on COSS presentation – 2 hours
- Total Hours Worked: 20 hours

April 18, 2014

- 4/14/2014 – Worked on COSS (Celebration of Student Scholars) presentation (over digital CricketSat) – 3 hours
- 4/15/2014 – Worked on COSS presentation – 4 hours
- 4/16/2014 - Worked on design of digital cricketsat. Worked on COSS presentation – 5 hours
- 4/17/2014 – Finished COSS research and presentation – 3 hours

April 28 – May 3, 2014

- 4/28/14 – Worked on DC – 3 hours
- 4/29/14 – Worked at Aerospace Industry Day – 8 hours
- 4/30/14 – Worked on digital cricketsat – 4 hours

Total Hours Worked: 60

David Mays
March 31 – April 4 , 2014

- 3/31/14 – Acquired $50Sat software. Studied code and created some ground station code based off the $50Sat ground station code – 6 hours
- 4/2/14 – Continued work on modified $50Sat GS code. Worked on code related to packet sending – 4 hours
- 4/3/14 – Worked on GS code. Started adding packet-commanding code into flight code – 6 hours
- 4/4/14 –Worked on GS and flight code
- Total Hours Worked – 20 hours
-

April 14 – April 18, 2014

- 4/14/2014 – Worked on finishing mounting blocks for 3D Printing. Worked with ground station board – 6 hours
- 4/15/2014 – Finished mounting blocks. Worked on ground station code – 4 hours
- 4/16/2014 – Worked on GS code. Experimented with packet function of RFM22 - 6 hours
- 4/17/2014 – Worked on GS and flight code – 4 hours

Total Hours Worked: 40

Shay Hammond
March 30 – April 5, 2014

- 3/31/2014 – Rock 'N Run website – 3 hours
- 4/1/2014 – worked on both websites – 3 hours
- 4/2/2014 – worked on both websites and also talking with Dr. Marshall through email – 2 hours
- 4/3/2014 – worked on both websites 0 2 hours
- 4/4/2014 – worked on both websites and researched upcoming website – 3 hours
- Total Hours Worked: 13

April 13-April 19, 2014

- 4//14/2014 – CMS training – 1 hour
- 4/15/2014 – Met with Jessi regarding YPEK Workshop – 3 hours
- 4/16/2014 – Worked on workshop presentation – 2 hours
- 4/17/2014- Worked on workshop presentation – 5 hours
- 4/18/2014 – Worked on workshop presentation – 2 hours
- Total Hours Worked – 13 hours

Week April 20th – April 26th

This week, I met with Dr. Marshall and discussed what he would like updated on the CRE Website. I worked on these updates and also worked on the YPEK Presentation Jessi and I will be doing in May. I also helped her set up GitHub in order to work together on a website for Mt. Sterling Chamber of Commerce.

- Monday 4/21/2014: 3 hours meeting with J. Marshall and working on CRE site.
- Tuesday 4/22/2014: 4 hours working on CRE site and setting up our GitHub account.
- Wednesday 4/23/2014: 2 Hours spent on the CRE Website.
- Thursday 4/24/2014: 2 Hours spent on CRE website and workshop presentation.
- Friday 4/25/2014: 2 hours spent on the workshop presentation.

I was able to work 13 hours this week.

April 29-May 3

I spent this entire week working on the workshop presentation with Jessi. We will present it on Saturday May 10th.

- Monday 4/29/2014: 2 hours on workshop presentation.
- Tuesday 4/30/2014: 2 hours on workshop presentation.
- Wednesday 5/1/2014: 2 hours on workshop presentation.
- Thursday 5/2/2014: 3 hours on workshop presentation.
- Friday 5/3/2014: 4 hours on workshop presentation.

I was able to work 13 hours this week.

Total Hours Worked Worked: 52

HQ Report: Continued supervising interns. Coordinated schedules. Tracked and maintained hours. Ensured payroll. Monitored and approved pay. Coordinated working groups and client activity. Phone calls and emails w/ OBOD and W. Bates.

Total Hours: 40

NKU Report: Continued mapping broadband in Maysville. Coordinated w/ Mayor. Phone calls and emails to MSU. Bi-weekly call in and updates.

Total Hours: 10

MAY 2015 REPORTS:

INTERN REPORTS

Kevon Jackson

May 1-May 15

- 2 hours on emails
- 1 hour discussing projects with other interns
- Working on criminal scraper for Edwin Orange project: 17hours

Total Hours Worked: 20

Kamille Onorato
May 1 – May 15, 2014

- May 5, 2014 – Meeting with William Holbook concerning the Kevin Brown project at Consinet – 1 hour
- May 9, 2014 – Emails, completing evaluation – 1 hour
- May 13, 2014 – Research for TMBCF Project – 2 hours
- May 15, 2014 – Emails for week – 1 hour

Total Hours Worked: 5

David Mays
Dates April 28, 2014 to May 2, 2014

Project Description: BeakerSat and Ground Station

Goals complete this week:
- 4/30/14 - Assisted with Aerospace Industry Day 7.5 Hours
- 5/1/14 - Made progress with ground station and mounting blocks. 2.5 Hours

Goals for next week:
- Revise mounting blocks with corrections

Continue making progress with packet handler

Total Hours Worked Worked: 9.5

Shay Hammond

May 4-May 10

I spent this entire week working on the workshop presentation with Jessi. I also spend a little time working on the CRE Website, as well as meeting with Jessi and Karen Cornett. We also presented on Saturday May 10th.

- Sunday 5/4/2014: 3 hours on workshop presentation.
- Monday 5/5/2014: 4 hours meeting with Jessi and workshop presentation.
- Tuesday 5/6/2014: 4 hours meeting with Karen, working on CRE website and Workshop presentation.
- Friday 5/9/2014: 2 hours on workshop presentation.

I was able to work 13 hours this week.

Week May 11th – May 17th

This week I started helping Jessi Robinson of Print + Pixel,with the Mt. Sterling Chamber of Commerce website, as well as sketching some designs for the Cave Run Manor branding project. I also did a lot of data entry for the Morehead Tourism website and created some webpages for the CRE.

- Monday 5/12/2014: 5 hours on Mt. Sterling Chamber website and branding project.
- Tuesday 5/13/2014: 4 hours on CRE website and data entry for Morehead Tourism.
- Wednesday 5/14/2014: 4 hours on CRE website and Morehead Tourism.
- Thursday 5/15/2014: 3 hours spent on CRE website.
- Friday 5/16/2014: 2 hours spent on Mt. Sterling Chamber of Commerce
- Saturday 5/17/2014: 2 hours spent on Mt Sterling Chamber of Commerce.

I was able to work 20 hours this week.

May 18-May 23

I spent this entire week working on the Mt. Sterling Chamber of Commerce website.

- Sunday 5/ 18/2014: 4 ½ hours spent developing page templates.
- Monday 5/19/2014: 4 ½ hours spent developing custom widget area.
- Tuesday 5/20/2014: 2 hours spent creating footer and adding content.
- Wednesday 5/21/2014: 5 hours spent creating home page sliders.
- Thursday 5/22/2014: 1 hour spent on home page sliders.
- Friday 5/23/2014: 3 hours spent on responsive menu.

Total Hours Worked: 53

HQ Report: Coordinated finals week schedules. Tracked and maintained hours. Worked to pass off clients where interns were leaving. Arranged for interns to stay during summer. Ensured payroll. Monitored and approved pay. Coordinated working groups in light of students leaving. Evaluated all student workers and met to discuss their semester long evaluation process as per federal work study requirements. Processed invoice for NKU.

Total Hours: 50

NKU Report: Completed mapping of broadband in Maysville. Finalized graphic description of work. Phone calls and emails to MSU. Submitted invoice info to school.

Total Hours: 25

JUNE 2014 REPORTS:

INTERN REPORTS

JUNE 2014

Kamille Onorato

- **June 20th, 2014** I spent 2 hours working with William Holbrook on the project for Kevin Brown at ConsiNet. During this time, we used Python and the Pyephem library to try and track the International Space Station so that we could ensure the accuracy of our program.
- **June 23rd, 2014** This date was also spent working with William Holbrook on Kevin's project. We spent an hour discussing an algorithm to send and receive messages from an antennae to a computer.
- **June 25th, 2014** On the 25th, I spent two hours studying Objective C and how to reskin an application for the TMBCF project. This time was necessary as the application we are creating would be editing existing source code written in Objective C, a language I have never used prior to this project.

During this pay period, I spent approximately one hour a week corresponding with clients, other interns, Vicci Lewis, and Johnathan Gay via email.

Total Hours Worked Worked: 7

Murphy Stratton
June 2 – June 5, 2014

I am currently working on researching the broadband initiative and working on the digital CricketSat with Bob Twiggs, CEO of Teton Aerospace as well as working on the ICE reboot mission, making display models for the Highlands museum, and working on enhancing my skill set.

- Monday 06/02/2014: 2 hours setting up computers in computer lab, 4 hours tabbing solar cells for models
- Tuesday 06/03/2014: 1 hour research meeting, 6 hours tabbing solar cells for models
- Wednesday 06/04/2014: 2 hours cleaning clean room/ moving equipment to another location, 2 hours making flight box models
- Thursday 06/05/2014: 2 hours inventorying the SSC, 1 hour practice micro soldering

I am currently working on researching the broadband initiative and working on the digital CricketSat with Bob Twiggs, CEO of Teton Aerospace as well as working on the ICE reboot mission, making display models for the Highlands museum, and working on enhancing my skill set.

- Tuesday 06/10/2014: 4 hours making models for the Highlands museum exhibit (this includes building and testing solar panels, cutting out 3D printed parts, etc. my supervisor is Eric Thomas and I work with Jacob Wade who is another employee); 1 hour research meeting (the student team reports on their work and upcoming events are announced and discussed-usually led by Dr. Malphrus); 3 hours moving highbay (our work equipment in the highbay must be relocated to make way for the construction of the mezzanine, this includes moving all computers, benches, tools, chairs, cabinets, etc upstairs to Bob Twiggs lab or othe classrooms.

- I was sick the rest of the week with strep throat so I was unable to work.

I was able to work 8 hours this week.

June 16-June 20

I am currently working on researching the broadband initiative and working on the digital CricketSat with Bob Twiggs, CEO of Teton Aerospace as well as working on the ICE reboot mission, making display models for the Highlands museum, and working on enhancing my skill set.

- Monday 06/16/2014: 3 hours testing digital cricketsat: The digital cricketsat was developed by Bob Twiggs, CEO of Teton Aerospace who uses the small spacecraft for STEM related activites and sells the device (along with other STEM products) to schools, parents, camps, etc. The products are commercialized and a website is in place. When I test the digital cricketsat I check different voltages on the board to check for shorts. I also check the amount of Hz that are being outputted. I also check and see if the download circuit programs the microprocessor and outputs a signal. The digital cricketsat teaches a wide range of skills and teachers, parents, etc. purchase these devices (not put together) to teach basic electronic skills. The kit is also an inexpensive way to simulate a complete space mission on a smaller scale. 2 hours building models for Highlands museum exhibit: The Highlands museum is in Ashland Ky and an exhibit for Space Industry is being made. The SSC is printing 3D parts and making models of our previous satellites. The exhibit will bring awareness to the SSC and the growing space economy that's developing in eastern Kentucky which in turn increases the need for broadband.

- Tuesday 06/17/2014: 3 hours testing, programming and transmitting on the digital cricketsat: When I program the digital cricketsat I make sure the microprocessor is programmed and beaconing. I then take the chip and put it into the digital cricketsat

and plug it into the power source while I have the SDR (software defined radio) running. I can see the beacon from the digital cricketsat on the waterfall display of the SDR and it transmits at 437.9 MHz. The fact that it works means a whole new skill is gained from the digital cricketsat. The DCS could be more expensive in comparison to the analog cs which would improve STEM companies in eastern ky. 2 hours building models for highlands museum.

- Wednesday 06/18/2014: 3 hours making Highlands models. 2 hours working on new PCB design for DCS: A new design allows for the possibility of a sleeker more compact design. I'm trying to do that using altium and expressPCB. Less components means less cost and more profit. STEM companies benefit and expands broadband in this region.

- Thursday 06/19/2014: 2 Hours on Highland models: 1 hour on DCS pcb layout.

- Friday 06/20/2014: 2 hours writing this report.

I was able to work 20 hours this week.

June 23-June 26

I am currently working on researching the broadband initiative and working on the digital CricketSat with Bob Twiggs as well as working on the ICE reboot mission, making display models for the Highlands museum, and working on enhancing my skill set.

Monday 06/23/2014:
- 3 hours working on new PCB design for DCS: A new design allows for the possibility of a sleeker more compact design. I'm trying to do that using altium and expressPCB. Less components means less cost and more profit. STEM companies benefit and expands broadband in this region.
- 3 hours building models for Highlands museum exhibit: The Highlands museum is in Ashland Ky and an exhibit for Space Industry is being made. The SSC is printing 3D parts and making models of our previous satellites. The exhibit will bring awareness to the SSC and the growing space economy that's developing in eastern Kentucky which in turn increases the need for broadband.

Tuesday 06/24/2014:
- 3 hours working on new PCB design for DCS: A new design allows for the possibility of a sleeker more compact design. I'm trying to do that using altium and expressPCB. Less components means less cost and more profit. STEM companies benefit and expands broadband in this region.
- 2 hours building models for highlands museum: " "

Wednesday 06/25/2014:
- 3 hours making dry ice blocks: the dry ice blocks were made for a camp that came to the SSC. This camp allowed young students to build their own comet using various ingredients that simulate that of a comet's. This camp gets kids interested in Space

Science which could in turn make them interested in space and space business later in their lives. It also promotes the SSC business and promotes STEM businesses in eastern KY.

- 2 hours assisting campers in activity.

Thursday 06/26/2014:

- 4 hours assisting Bob Twiggs, CEO of Teton Aerospace with his jiggy bot camp: This camp activity allowed students to learn basic electric skills. It also promoted BT company Teton and it's STEM possibilities.

Total Hours Worked Worked: 68

William L. Roach-Barrette

Week of: June 6th

Current Assignment: PocketQube 2.0

Accomplished Objectives:

- Thursday 5: Finalized parachute design with Bob Twiggs, CEO of Teton Aerospace and Jeff Kruth
- Friday 6: Found suitable batteries for Black Rock PocketQube

Goals For Next Week:

- Get Parachute mounted and batteries mounted on Black Rock PocketQube. To do this I really need the assistance of Zach who was unavailable this week.

Week of: June 20th -27th

Current Assignment: ARLAS PocketQube Mission

Company Assigned: Teton AeroSpace

Accomplished Objectives:

I am writing this as a bi-weekly report to make up for my lack of one the week before, I was on the road traveling and was unable to send a copy

- Successfully packaged, and launched, the Black Rock PocketQube in Black Rock Nevada on June 21st 2014. I am including a brief summary of the project below:

INVESTIGATION OF POCKETQUBES IN ARLAS ROCKETS AS AFFORDABLE MEANS OF HIGH EARTH ALTITUDE LAUNCHES

On Saturday, June 21, 2014, a flight model PocketQube was launched on an ARLAS Lite rocket to determine the usability of ARLAS Rockets as high altitude launch vehicles. Using ARLAS Rockets allows satellite developers to test their flight

hardware and software in a small scale test environment, without the larger costs that come along with full scale LEO or greater launches. If refined and perfected, the ARLAS platform can also be used as a teaching tool for college and high school classrooms as a way for students to develop and launch either PocketQubes or CanSats.

The PocketQube launched was a revision of T-LogoQube, a recently launched femtosat designed as a collaboration between Sonoma and Morehead State Universities. The satellite possessed a magnetometer capable of determining the rate at which it was spinning. It did this by gathering and preforming a fast Fourier transform on the magnetic field data gathered as the satellite spun. This data was then transmitted out of the onboard radio with various other telemetry data. The end goal was to launch this modified T-LogoQube from the ARLAS Lite rocket, and collect data using a handheld Yagi as it descended with the aid of an included parachute.

Modifications were made to the PocketQube to ensure it could handle the extreme forces exerted during launch and parachute deployment of the ARLAS Rocket. First, additional support bars were added

along the ends of the PocketQube to help secure the end plate and antenna. Solar panels were not added, and instead, two Lithium ion batteries were used in parallel to give the PocketQube 2200 mAh of lifetime. A recharging circuit was built into the remove before flight pin, to enable easy, last minute charging.

On the day of flight, a final test was done to ensure data transmission worked properly, the PocketQube was then loaded into the payload bay of the ARLAS Light Rocket, and carried to the launch-pad. Final checks were made and the rocket was launched. Around the fourth second of liftoff, an error in the detonation sequence designed to eject the PocketQube at apogee was prematurely triggered, ejecting the PocketQube. This meant the PocketQube was ejected during the acceleration phase of the rocket. As a result, the parachute was torn from its shroud lines giving the PocketQube no way to safely decelerate. The flight box indicates the ejection altitude was approximately 5000ft. As the PocketQube began to descend, one of its antennas was torn off and not recovered. The rest of the satellite ended up around 500ft downrange of the launch. Despite falling nearly 5000ft, the outside structure remained intact and the PCB undamaged. The wire connecting the batteries to the main board appeared to have been severed sometime during launch and decent however, and transmission and data collection sized as a result. It is still unclear if any meaningful data can be collected, as the board still needs to be extracted from the slightly deformed body. I will be working on it next week.

Despite the launch issue, meaningful information was gathered, still making the trip a success. Approval has been granted to begin on a second revision that will be launched in September. This will now become a high priority item on my list of tasks.

Goals For Next Few Week:

- Finish T-LogoQube documentation
- Install software on Professor Twigg's Computer
- Meet with ARLAS Team to hammer out plans for September ARLAS Launch
- Clearly articulate a mission statement for Launch and set weekly goals
- Investigate new computers, sensors and radios for use in September ARLAS Launch
- List set of improvements to virtual classroom
- Investigate Possible addition of Wi-Fi controlled rovers or students in virtual classroom

Hours Worked: 40

Week of: June 13th

Current Assignment: PocketQube 2.0

Accomplished Objectives:

- This week I finished the Black Rock PocketQube project for Professor Bob Twiggs. This mission will launch next weekend in Black Rock Nevada and I will be on site first hand during the launch to take all data and ensure success. I will also be live streaming the event the day of the launch to family friends and coworkers in Eastern Kentucky.

Goals For Next Week:

- Test Black Rock PocketQube to ensure a successful flight.
- Build antenna to receive data from the Black Rock PocketQube once launched.
- Fly to Nevada
- Launch PocketQube

Total Hours Worked: 80

David Mays
June 2-June 6, 2014

- June 2, 2014 – Worked on timer circuit. Met with Bob Twiggs, CEO of Teton Aerospace. – 5 hours
- June 3, 2014- Worked on timer circuit. Conferred with Jeff about circuit. Worked on PCB footprints for the SSC (Dr. Ben Malphrus). – 5 hours

- June 4, 2014 – Came to talk to Jeff. (Bob Twiggs) – 2 hours
- June 5, 2014 – Worked on PCB with Jordan. Made progress with regulators – 3 Hours
- June 6, 2015 –Finished timer circuit. Worked on PCB.– 5 Hours
- Total Hours Worked – 20 hours

June 8-June 13, 2014

This week I worked on the following projects:

CZT Array Testing and Evaluation – CXBN II

The Cadmium Zinc Telluride, or "CZT" detector array is basically a radiation detector. This detector is currently being evaluated and tested for its usability on a cubesat satellite in development, CXBN II. CXBN stands for *Cosmic X-Ray Background Nanosat.* As the name implies, it is meant to measure the X-Ray background that is present in space.

Supervisor/Overall Lead: Dr. Ben Malphrus – Space Tango

- Team Leads: MSU Students: Jordan Healea, Sean McNeil
- Team Mates: MSU Student: Brooke Shellabarger
- Duties: Layout of circuit board for interface with CZT detector, design of test fixture, and design of box to prevent penetration of unwanted radio frequencies and light.

BeakerSat/TU-POD

BeakerSat is a PICAXE processor based satellite bus developed for the PocketQube form factor. Jordan Healea and I developed BeakerSat under Bob Twiggs, CEO of Teton Aerospace. A version of BeakerSat is going to be launched from the ISS and deployed from a TU-POD launcher. The TU-POD deployer is a new deployer designed to launch Tube-Sats, which are satellites in a cylindrical form-factor. The TU-POD launcher is designed to fit within a regular MR-FOD CubeSat Launcher.

Supervisor/Overall Lead: Bob Twiggs – Teton Aerospace

- Team mates: MSU Students: William Roach-Barette, Jenafer Grindrod, Zach Taulbe, Amber Myre, Cody Robinson.
- Duties: Rework of BeakerSat, Development of TU-POD deployment time

My work this week went as follows:

- Monday: Worked on laying out microcontroller for Redlen CZT array. -2 Hours
- Tuesday: Worked on BeakerSat code, worker meeting – 3 Hours.
- Thursday: Continued work on microcontroller layout. CZT Meeting. – 4 hours
- Friday: Worked on schematic and PCB layout for CZT array, met with Bob Twiggs about TU-POD mission. – 6 Hours.

I worked a total of 15 hours this week.

June 22-June 27, 2014

This week I worked on the following projects:

CZT Array Testing and Evaluation – CXBN II

The Cadmium Zinc Telluride, or "CZT" detector array is basically a radiation detector. This detector is currently being evaluated and tested for its usability on a cubesat satellite in development, CXBN II. CXBN stands for *Cosmic X-Ray Background Nanosat.* As the name implies, it is meant to measure the X-Ray background that is present in space.

Supervisor/Overall Lead: Dr. Ben Malphrus

- Team Leads: MSU Students: Jordan Healea, Sean McNeil
- Team Mates: MSU Student: Brooke Shellabarger
- Duties: Layout of circuit board for interface with CZT detector, design of test fixture, and design of box to prevent penetration of unwanted radio frequencies and light.

BeakerSat/TU-POD

BeakerSat is a PICAXE processor based satellite bus developed for the PocketQube form factor. Jordan Healea and I developed BeakerSat under Bob Twiggs, CEO of Teton Aerospace. A version of BeakerSat is going to be launched from the ISS and deployed from a TU-POD launcher. The TU-POD deployer is a new deployer designed to launch Tube-Sats, which are satellites in a cylindrical form-factor. The TU-POD launcher is designed to fit within a regular MR-FOD CubeSat Launcher.

Supervisor/Overall Lead: Bob Twiggs – Teton Aerospace

- Team mates: MSU Students: William Roach-Barette, Jenafer Grindrod, Zach Taulbe, Amber Myre, Cody Robinson.
- Duties: Rework of BeakerSat, Development of TU-POD deployment timer.

My work this week went as follows:

- Tuesday: Worked on making PCB footprints in Altium. Worked on BeakerSat code. – 4 Hours.
- Thursday: Layed out schematic for cutting circuit. Built up BeakerSat Flight Board. – 6 hours

- Friday: Built up Deployment Circuit. Continued putting together BeakerSat flight board. Rounded edges of BeakerSat PCB to fit in TU-POD – 6 Hours.

Total Hours Worked: 51

Weekly Work/Status Report

Week June 15th – June 21st

Current Assignments: Mt. Sterling Chamber, Center for Regional Engagement

Working Group: Rowan and Montgomery

Company Assigned: Print + Pixel

From: Shay Hammond

I spent this week working with Jessica Robinson from Print and Pixel Creative in Mt. Sterling, Kentucky. I worked on the Mt. Sterling Chamber of Commerce website, as well as the website for Turkey Trot, which is a local fundraising event.

- On Monday June 16th, 2014, I spent 4 ½ hours working on the Mt. Sterling Chamber of Commerce website. I fixed errors and added content.
- I spent another 4 hours at a meeting with the Mt. Sterling Chamber of Commerce and Jessica Robinson on June 17th, 2014. That evening, I spent 1 hour fixing mobile errors for the website.
- On June 18th, 2014, I spent 1 ½ hours researching fitness website layouts/typical content in order to prepare for an upcoming website for Fusion Fitness in Mt. Sterling, Kentucky.
- On June 20th, 2014, I spent 5 hours recreating the Turkey Trot website from scratch. We were unhappy with my original design.
- On June 21st, 2014, I spent 4 hours working on the Turkey Trot website. I worked on positioning and mobilization.

I was able to work 20 hours this week.

Week June 22nd – June 28th

This week was spent fixing errors on the Mt. Sterling Chamber of Commerce, and perfecting how it looks on all devices. I also spent a little time working on the Turkey Trot website. I worked with Jessica Robinson from Print and Pixel Creative in Mt. Sterling, KY.

- On Sunday June 22nd , 2014, I spent 2 hours working on the Turkey Trot website.

I needed to fix positioning errors, as well as some issues with responsiveness.

- On June 23rd, 2014, I spent another 5 hours on the Mt. Sterling Chamber of Commerce website. I need to work on the design element of different header images on different pages.
- On June 24th, 2014, I spent 4 hours on the Mt Sterling Chamber of Commerce website, working on the responsiveness. The main portion of my time was spent on making sure the website appeared correctly on an ipad.
- On June 25th, I spent another 4 hours continuing my work on the responsiveness.
- On June 27th, I worked for 3 hours on the same issue. I also added content to the Community Information section.
- On June 28th, I spent 2 hours finishing details for the responsive design.

I was able to work 20 hours this week.

Total Hours Worked: 40

HQ Report: Supervised interns. Began posting job requirements for new interns within the colleges at MSU. Coordinated schedules on a reduced workload. Tracked and maintained hours. Ensured payroll. Monitored and approved pay. Coordinated working groups and client activity. Phone calls and emails w/ OBOD and W. Bates.

Total Hours: 40

NKU Report: No activity

Total Hours: 0

JULY 2014 REPORTS:

INTERN REPORTS

Tiaunda Ramsey

July 1-July 15

I worked a total of 10 hours for the pay period of July 1, 2014 to July 15, 2014.

The majority of this pay period focused on the TMBCF mobile game application project. This foundation is looking to use the mobile game in order to raise money for cancer patients. I read an hour a night from a mobile programming text on Tuesday the 1st through Thursday the 3rd. I then read two hours on Friday the 4th. I read once more during the pay period on Friday, the 11th. The readings amounted to 8 hours.

The remaining 2 hours that I worked during the pay period were gained through reading and checking for e-mails and contacting Kamille for details on this project. I also accepted leadership in this project

Total Hours Worked: 15

Murphy Stratton
July 2-3

I am currently working on researching the broadband initiative and working on the digital CricketSat with Bob Twiggs, CEO of Teton Aerospace as well as working on the ICE reboot mission, making display models for the Highlands museum, and working on enhancing my skill set.

Wednesday 07/02/2014:

- 3 hours working on new PCB design for DCS: A new design allows for the possibility of a sleeker more compact design. I'm trying to do that using Altium and express PCB. Less components means less cost and more profit. STEM companies benefit and expands broadband in this region.
- 2 hours in meetings for the SSC: we meet weekly to report our work and talk about current happenings in the SSC.

Thursday 07/03/2014:

- 3 hours working on new PCB design for DCS: A new design allows for the possibility of a sleeker more compact design. I'm trying to do that using altium and expressPCB. Less components means less cost and more profit. STEM companies

benefit and expands broadband in this region.
- 2 hours taking passes: we track spacecraft using our 21 meter antenna and yagi antenna system with our ground station/control center. We track our own satellites as well as various client's spacecraft.

I was able to work 10 hours this week.

July 7-July 10

I am currently working on researching the broadband initiative and working on the digital CricketSat with Bob Twiggs as well as working on the ICE reboot mission, making display models for the Highlands museum, and working on enhancing my skill set.

Monday 07/07/2014:
- 3 hours working on DCS: A new design allows for the possibility of a sleeker more compact design. I'm trying to do that using Altium and express PCB. Less components means less cost and more profit. STEM companies benefit and expands broadband in this region as well as promotes the business for Twigg's company Teton.
- 2 hours on Models for the highland museum: The models will display various satellites built by the SSC. The models will bring business to the SSC increasing its need for broadband.

Tuesday 07/08/2014:
- 3 hours working on DCS: A new design allows for the possibility of a sleeker more compact design. I'm trying to do that using Altium and express PCB. Less components means less cost and more profit. STEM companies benefit and expands broadband in this region as well as promotes the business for Twigg's company Teton.
- 2 hours taking passes: we track spacecraft using our 21 meter antenna and yagi antenna system with our ground station/control center. We track our own satellites as well as various client's spacecraft.

Wednesday 07/09/2014:
- 4 hours working on new PCB design for DCS: A new design allows for the possibility of a sleeker more compact design. I'm trying to do that using Altium and express PCB. Less components means less cost and more profit. STEM companies benefit and expands broadband in this region as well as promotes the business for Twigg's company Teton.
- 3 hours working on highlands museum models: The models will display various satellites built by the SSC. The models will bring business to the SSC increasing its need for broadband.

Thursday 07/10/2014:
- 1 hour taking passes: we track spacecraft using our 21 meter antenna and yagi

antenna system with our ground station/control center. We track our own satellites as well as various client's spacecraft.

- 2 hours working on highlands museum models: The models will display various satellites built by the SSC. The models will bring business to the SSC increasing its need for broadband.

I was able to work 20 hours this week.

July 21-July 25

I am currently working on researching the broadband initiative and working on the digital CricketSat with Bob Twiggs, CEO of Teton Aerospace as well as the TubeSat initiative, both bring business and awareness to his small space business Teton. I'm also working on the destiny module that will be going to the Highlands museum. In the downtime I track satellites and work on enhancing my skill set.

Projects:

Digital CricketSat: The Digital CricketSat is a digitized version of the cricketsat that works with a microprocessor. The device is a STEM tool that teaches basic engineering skills along with programming. I work on the device with Twiggs and it supports his space business Teton which in turn enhances the need for Broadband in eastern Ky.

TubeSat: The TubeSat is a satellite currently being developed by Bob Twiggs, CEO of Teton Aerospace and a team of students. The TubeSat deployer holds a satellite in it that will be deployed. Currently the paperwork and ICD is being done for the TubeSat and I am helping with that. This also supports his space business Teton which in turn enhances the need for Broadband in eastern Ky.

Destiny Module: The Destiny Module is a replica that we are building for the Highlands Museum. Building it includes building all the electronics that goes inside of it. It will bring business to the Highlands Museum as well as the Space Science Center, which is its own private entity. Bringing business to the SSC and Highlands Museum increases the need for broadband in this region.

- Monday 07/21/2014: 2 hours on Destiny module conceptualizing designs for inside. 2 hours finishing schematic for DCS. 1 hour assisting with parts list for TubeSat.
- Tuesday 07/22/2014: 2 hours working on destiny module. 1 hour tracking satellites. 2 hours assisting with ICD for TubeSat.
- Wednesday 07/23/2014: 2 hours conceptualizing destiny module. 2 hours on TubeSat ICD. 1 hour tracking satellites.
- Thursday 07/24/2014: 1 hour tracking satellite. 2 hours on Destiny Module.

I worked 17 hours this week

Total Hours Worked: 47

William L. Roach-Barrette

Week of: July 11th

Current Assignment: PocketQube 2.0

Company Assigned: Teton AeroSpace

Accomplished Objectives:

- Finished official parts list and put in request to have it ordered
- Assigned to make revisions to the Ground Station computer
  - Ordered new harddrive for it

Goals For Next Week:

- Begin working on new Raspberry Pi, which is to be the main driving platform for the new PocketQube
- Get the new harddrive installed in ground station computer

Hours Worked: 20

Week of: July 18th

Current Assignment: PocketQube 2.0

Company Assigned: Teton AeroSpace

Accomplished Objectives:

- Installed hard drive in ground station computer
- Somewhat successfully flashed a RaspberryPi with an OS, though cannot presently get it to boot up, have to investigate cause and possibly reflash drive.

Goals For Next Week:

- Get Raspberry Pi working
- Get a version of Linux working on my laptop for development with raspberry pi

Hours Worked: 20

Week of: July 25th

Current Assignment: PocketQube 2.0

Company Assigned: Teton AeroSpace

Accomplished Objectives:

- Determined cause of issue when flashing raspberry pi, in process I realized I was actually wiping the main harddrives of the computers I attempted to use to flash raspberry pi, code corrected now, will be working on raspberry pi next week.

Goals For Next Week:

- Get Raspberry Pi working
- Fix computers plagued with my stupidity

Total Hours Worked: 60

David Mays
July 6-July 11, 2014

This week I worked on the following projects:

CZT Array Testing and Evaluation – CXBN II

The Cadmium Zinc Telluride, or "CZT" detector array is basically a radiation detector. This detector is currently being evaluated and tested for its usability on a cubesat satellite in development, CXBN II. CXBN stands for *Cosmic X-Ray Background Nanosat.* As the name implies, it is meant to measure the X-Ray background that is present in space.

Supervisor/Overall Lead: Ben Malphrus

- Team Leads: MSU Students: Jordan Healea, Sean McNeil
- Team Mates: MSU Student: Brooke Shellabarger
- Duties: Layout of circuit board for interface with CZT detector, design of test fixture, and design of box to prevent penetration of unwanted radio frequencies and light.

BeakerSat/TU-POD

BeakerSat is a PICAXE processor based satellite bus developed for the PocketQube form factor. Jordan Healea and I developed BeakerSat under Bob Twiggs, CEO of Teton Aerospace. A version of BeakerSat is going to be launched from the ISS and deployed from a TU-POD launcher. The TU-POD deployer is a new deployer designed to launch Tube-Sats, which are satellites in a cylindrical form-factor. The TU-POD launcher is designed to fit within a regular MR-FOD CubeSat Launcher.

Supervisor/Overall Lead: Bob Twiggs – Teton Aerospace

- Team mates: MSU Students: William Roach-Barette, Jenafer Grindrod, Zach Taulbe, Amber Myre, Cody Robinson.
- Duties: Rework of BeakerSat, Development of TU-POD deployment timer.

App work for Client

I'm currently working with a local client, Abe Byrd, on what we can do to help him in development of his application. Everything is preliminary so there's not much to say yet.

My work this week went as follows:

- Monday: Populated components on TU-POD timer. Adjusted and performed tests on TU-POD timer. Did research on components for CXBN project. Restored lost work due to virus on computer. -6 Hours
- Tuesday: Completed component list for microcontroller board. Cut down BeakerSat PCB. Experimented with relay for timer circuit. – 6 Hours.
- Thursday: Finished PCB design for microcontroller PCB. Talked with Bob Twiggs, CEO of Teton Aerospace about deployment circuitry and components. – 6 hours.
- Friday: Talked with client Abe Boyd about app. – 1 Hour.

Total Hours Worked: 19

Weekly Work/Status Report

Week July 13th – July 19th

Current Assignments: Mt. Sterling Chamber, Center for Regional Engagement

Working Group: Rowan and Montgomery

Company Assigned: Print + Pixel

From: Shay Hammond

I spent this entire week working on the Turkey Trot redesign. Jessi Robinson wanted me to focus on Typography, as well as graphics.

- On Tuesday July 15th, 2014, I spent 3 hours working on the Turkey Trot website by incorporating different fonts.
- On Wednesday July 16th, 2014, I spent 4 hours on the Turkey Trot website, creating graphics to illustrate the "about" section.
- On Saturday July 19th, 2014, I spent 2 hours on the Turkey Trot website, working on the color palette.

Week July 20th – July 26th

I spent this entire week continuing my work for the Turkey Trot website. Jessi Robinson and I also had a meeting on Wednesday with the Turkey Trot 5K organizers, where we discussed the website.

- On Monday July 21st, 2014, I spent 3 hours working on the Turkey Trot website. I continued to work with different fonts, and finally settled on the final outcome.
- On Tuesday July 22nd, 2014, I spent 2 hours on the Turkey Trot website, working out sizing and spacing issues.
- On Wednesday July 23rd, 2014, I spent 2 hours on the Turkey Trot website. I worked on mobilizing the website for all devices.
- On Friday July 25th, 2014, I spent 2 hours creating forms for the Turkey Trot committee to use for sponsor/donor registration.

Week July 27th – August 2nd

This week was spent creating a flyer to advertise the Turkey Trot 5k in Morehead, KY. Jessi Robinson critiqued my work multiple times, until we finally settled on a design on Wednesday.

- On Monday July 28th, 2014, I spent 4 hours working on the Turkey Trot flyer first draft.
- On Tuesday July 29th, 2014, I spent 2 hours on the Turkey Trot flyer second draft.
- On Wednesday July 30th, 2014, I spent 3 hours on the Turkey Trot flyer final design, as well as fixing some minor mobile responsive errors.

Total Hours Worked: 27

HQ Report: Continued supervising interns. Coordinated schedules. Tracked and maintained hours. Ensured payroll. Monitored and approved pay. Coordinated working groups and client activity. Phone calls and emails w/ OBOD and W. Bates.

Total Hours: 40

NKU Report: No activity.

Total Hours: 0

AUGUST 2014 REPORTS:

INTERN REPORTS

Tiaunda Ramsey

Aug. 15 to Aug. 31

I worked a total of 6.74 hours this pay period.

In the first week, I earned 1.25 hours. On Tuesday, Aug. 19, I had a meeting with Vicci to discuss my schedule and current projects. This meeting began at 2:30 p.m. and lasted a half an hour. I earned the remainder of my hours for the week promoting the Mobile Application Programming Workshop. On each day, spanning from Wednesday, Aug. 20 to Friday, Aug. 22, in the range of hours between 3:00 and 4:15 p.m., I spent .25 hours posting the flier on social media, sending various messages to potentially interested students, and spreading the date and time by word of mouth on campus. This time spent promoting amounted to 45 minutes.

In the second week, I earned 4.49 hours. I began the week on Monday, promoting the workshop for the final time. I encouraged students to go for .25 hours, from 2:30 p.m. to 2:45 p.m. On Tuesday, Aug. 26, I attended the Mobile Application Programming Workshop. This lasted 3 hours, between 5:00 p.m. and 8:00 p.m. Directly after the workshop, Kevin had a small meeting with Kamille and I to discuss potential projects. This meeting lasted approximately 20 minutes. On Thursday, Aug. 28, I made a phone call, lasting .5 hours to a new client, Sharon Staviski, at the request of Kevin. We discussed her website and a possible rework to the site, as well as her company. Later that day, around 8:10 p.m., I consulted Kamille about this project. This lasted until about 8:35 p.m.

The final hour earned for the pay period was gained over the two week period, checking, and answering e-mails to Johnathan, Vicci, and Shay, regarding projects and other things related to the internship.

Total Hours Worked: 6.74

Week of: August 18th – August 22nd, 2014
Murphy Stratton

I am currently working on researching the broadband initiative and working on the digital CricketSat with Bob Twiggs as well as the TubeSat initiative, both bring business and awareness to his small space business Teton. I'm also working on the destiny module that will be going to the Highlands museum. In the downtime I track satellites and work on enhancing my skill set.

Projects:

Digital CricketSat: The Digital CricketSat is a digitized version of the cricketsat that works with a microprocessor. The device is a STEM tool that teaches basic engineering skills along with programming. I work on the device with Twiggs and it supports his space business Teton which in turn enhances the need for Broadband in eastern Ky.

TubeSat: The TubeSat is a satellite currently being developed by Bob Twiggs, CEO of Teton Aerospace and a team of students. The TubeSat deployer holds a satellite in it that will be deployed. Currently the paperwork and ICD is being done for the TubeSat and I am helping with that. This also supports his space business Teton which in turn enhances the need for Broadband in eastern Ky.

Destiny Module: The Destiny Module is a replica that we are building for the Highlands Museum. Building it includes building all the electronics that goes inside of it. It will bring business to the Highlands Museum as well as the Space Science Center, which is its own private entity. Bringing business to the SSC and Highlands Museum increases the need for broadband in this region.

Tracking Satellites, CXBN work

- Monday 08/18/2014: 3 hours working on destiny module, 2 hours tracking satellites
- Tuesday 08/19/2014: 3 hours working on destiny module. 1 hour tracking satellites. 2 hours assisting with ICD for TubeSat.
- Thursday 08/21/2014: 1 hour programming chips for Bob Twiggs, CEO of Teton Aerospace. 2 hours assisting with TubeSat paper work.

Total Hours Worked: 15

William L. Roach-Barrette

Week of: August 1th

Current Assignment: PocketQube 2.0

Company Assigned: Teton AeroSpace

Accomplished Objectives:

- Finally flashed SODIM Raspberry Pi with OS. Also restored computers plagued with my failures to a restored and functioning condition.
- Began work on Raspberry pi, first by installing necessary software for web hosting of the video stream, when in use.

Goals For Next Week:

- Achieve live web stream of video from the Raspberry Pi

Hours Worked: 20

Week of: August 8th

Current Assignment: PocketQube 2.0

Company Assigned: Teton AeroSpace

Accomplished Objectives:

- Achieved live video stream of webcam on raspberry pi, across a local network, to another computer.

Goals For Next Week:

- Meet with Professor Twiggs about design of a PCB
- Finalize and order components for assembly of PocketQube

Hours Worked: 20

Week of: August 15th

Current Assignment: The Cansat Formerly Known as PocketQube 2.0

Company Assigned: Teton AeroSpace

Accomplished Objectives:

- Had to downscope project from PocketQube form factor to a CanSat one. This does not change the final launching mechanism, ie the ARLISS Rocket, because the ARLISS carriers can accept anything from a PocketQube to a CanSat, with only minor changes to the carriers internal structure. The reason for the change was due to a lack of time to prepare and test a PCB board to accommodate the SODIM Raspberry Pi.

• Parts were ordered this week for final assembly of the flight model

Goals For Next Week:

• Construct CanSat bodies

• Begin work on final assembly and integration of parts into CanSat

Hours Worked: 20

Week of: August 22th

Current Assignment: ARLIS CanSat

Company Assigned: Teton AeroSpace

Accomplished Objectives:

● Waiting on parts to arrive and to find capable machinist to construct bodies of CanSats

Goals For Next Week:

● Find machinist to make CanSat bodies
● Test all components and begin final assembly of CanSat

Total Hours Worked: 80

David Mays
Work Progress Report
Aug 4-Aug 8, 2014

This week I worked on the following projects:

CZT Array Testing and Evaluation – CXBN II

The Cadmium Zinc Telluride, or "CZT" detector array is basically a radiation detector. This detector is currently being evaluated and tested for its usability on a cubesat satellite in development, CXBN II. CXBN stands for *Cosmic X-Ray Background Nanosat.* As the name implies, it is meant to measure the X-Ray background that is present in space.

Supervisor/Overall Lead: Ben Malphrus

- Team Leads: MSU Students: Jordan Healea, Sean McNeil
- Team Mates: MSU Student: Brooke Shellabarger
- Duties: Layout of circuit board for interface with CZT detector, design of test fixture, and design of box to prevent penetration of unwanted radio frequencies and light.

BeakerSat/TU-POD

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Supervisor/Overall Lead: Bob Twiggs – Teton Aerospace

- Team mates: MSU Students: William Roach-Barette, Jenafer Grindrod, Zach Taulbe, Amber Myre, Cody Robinson.
- Duties: Rework of BeakerSat, Development of TU-POD deployment timer.

App work for Client

I'm currently working with a local client, Abe Byrd, on what we can do to help him in development of his application. Everything is preliminary so there's not much to say yet.

My work this week went as follows:

- Monday – Worked on development roadmap for client Abe Boyd's application. 3 hours

I worked a total of 3 hours this week.

Aug 10-Aug 15, 2014

This week I worked on the following projects:

Supervisor/Overall Lead: Bob Twiggs – Teton Aerospace

- Team mates: MSU Students: William Roach-Barette, Jenafer Grindrod, Zach Taulbe, Amber Myre, Cody Robinson.
- Duties: Rework of BeakerSat, Development of TU-POD deployment timer.

Client Work:

I am currently working with Jason Belcher, helping him by answering his questions and attempting to figure out what we can do regarding his fledgling company, Appalachian Aerospace Group.

My work this week went as follows:

- Monday – Met with Bob Twiggs and TU-POD team. Worked on packet software for beakersat. Met with Kevin Bourne – 6 hours.
- Tuesday-Introduced myself to Jason Belcher. Continued modification of beakersat software. 6 hours.
- Friday- Looked up parts to order. Modified BeakerSat groundstation PCB. – 3 hours

I worked a total of 15 hours this week.

Aug 18-Aug 22, 2014

My work this week went as follows:

- Monday: Worked on packet commanding software for TU-Pod. Built up new BeakerSat board. – 5 hours
- Wednesday: Helped setup test rig for TU-POD deployment system. Setup BeakerSat for power drain testing. – 5 hours

I worked a total of 10 hours this week.

Aug 25-Aug 29, 2014

My work this week went as follows:

- Monday: Worked on power regulator for BeakerSat. Found new replacement component. Gathered needed materials. – 5 hours.
- Wednesday: Student worker meeting. Experimented with timer circuit, adjusting wait durations.– 5 hours
- Friday: Completed revised microprocessor PCB for CZT array testing. – 5 horus

I worked a total of 15 hours this week.

Total Hours Worked: 43

Weekly Work/Status Report

Week August 3rd – August 9th

Current Assignments: Mt. Sterling Chamber, Center for Regional Engagement

Working Group: Rowan and Montgomery

Company Assigned: Print + Pixel

From: Shay Hammond

This week was spent editing the Turkey Trot Flyer, as well as the Sponsor/Donation Registration form. I also began sketching some preliminary designs for Fusion Fitness, a gym based in Mt. Sterling, Ky. Finally, I fixed mobile issues on the Renfro Rock N' Run website. I worked with Jessi Robinson of Print and Pixel Creative.

- On Thursday August 7th , 2014, I spent 5 hours editing the Turkey Trot flyer and Sponsor/Donation Registration form. I also fixed some mobile issues on the Renfro Rock N' Run website.
- On Friday August 8th, 2014, I spent 4 hours researching and sketching designs for Fusion Fitness.

I was able to work 9 hours this week.

Week August 10th – August 16th

This week was spent moving the Renfro Rock N' Run website to a live server, as well as continuing my work on the preliminary designs for Fusion Fitness. I also had a few small things to fix with the Turkey Trot flyer and Sponsor/Donation Form. I worked with Jessi Robinson from Print and Pixel Creative.

- On Monday August 11th , 2014, I spent 2 hours moving the Renfro Rock N' Run website to a live server.
- On Wednesday August 13th, 2014, I spent 1 hour finalizing the Turkey Trot form and flyer.
- On Thursday August 14th, 2014, I spent 3 hours sketching a new set of Fusion Fitness website designs.
- On Friday August 15th, 2014, I spent 3 hours fixing a mistakes on the Renfro Rock N' Run website, as well as working on the Fusion Fitness designs.

Total Hours Worked: 18

Kristen Royse
August 18-August 24

I am currently working on enhancing my 3D modeling skill with Kevin Brown at ConsiNet through his SolidWorks course. By learning the software, I could potentially model parts for him to use on any projects he's working on within his

small business. This week particularly, I have worked on promoting the upcoming Application Development Workshop being held by the Kentucky Innovation Network and MSU Digital Leadership project. I am also building a presentation about social media for a social media workshop which I will attend with Johnathan Gay. This week I also worked with Murphy Stratton learning how to program a Digital CricketSat.

Projects:

SolidWorks: SolidWorks is solid modeling CAD software that runs on Microsoft Windows. SolidWorks is currently used by engineers and designers at over 165,000 companies worldwide. The software is used frequently by engineers to model new, and to enhance current satellite designs, and even specific parts of a satellite. What is built on SolidWorks can be taken and actually built inside of a machine shop. Kevin Brown, manager at ConsinNet, who I am working under currently feels this CAD software would be beneficial for me to learn as an introduction to satellite and software design.

Application and Gaming Development Workshop: Promoting the application and gaming development workshop to a more broad audience other than MSU students could allow for networking, which could potentially reach out to small businesses, and make them aware of the services we offer to them. It could also spark an interest in younger students, potentially allowing growth in the broadband community.

Social Media Workshop: The presentation I'm working on will cover how social media can help out small businesses. It will cover marketing strategies, audience strategies, etc. Johnathan and I will start locally, but eventually expand to other areas of Kentucky to teach small businesses about the benefits of social networking.

Digital CricketSat: The digital CricketSat is a digitized version of the CricketSat that works with a microprocessor. This device teaches basic engineering strategy, and programming.

- Monday 08/18/14: 2 hours working with SolidWorks and 30 minutes installing software to lab computers for class.
- Wednesday 08/20/14: 1 hour working with SolidWorks
- Friday 08/22/14: 2 hours working with the Digital CricketSat
- Sunday 08/24/14: 1 hour promoting workshop, 2 hours working on presentation, 30 minutes of SolidWorks, 1 hour working with Digital CricketSat

I worked 10 hours this week.

August 25 -August 31, 2014

I am currently working on enhancing my 3D modeling skills with Kevin Brown at ConsiNet through his SolidWorks course. This week, I was asked by Kevin Brown to begin my training on the ground station. I am also working the Jennifer Carter and Murphy Stratton on building a new program designed to recruit young women to get involved with space. The program is called SpacePREP. On Tuesday I attended the application development workshop with Mike Bryant, which gave myself and the other interns the basics to build our own app.

Projects:

SpacePREP: SpacePREP, a program being built by Jennifer Carter will be used to recruit young women to get involved with not only space, but STEM in general. Murphy, and I took time out this week to find online services that can provide the supplies needed for the program. Such items include safety goggles, solder, batteries, name tags, etc. The growing interest in STEM allows for potential small businesses to develop in the future, and more opportunity for students to fulfill tasks we provide to small businesses.

Ground Station: Training on the ground station is essential to my success in working for Kevin Brown at ConsiNet. Since his small business is building and selling radios, it's imperative that I learn how to communicate with the radios being used, wither it be by MSU or other space industries. The ground station does just that. Communicates with radios on satellites. In order to get practice on the ground station, I will be taking on satellite passes with other students at the Space Science Center and Kevin.

- Monday 08/25/14: 2 hours working with SolidWorks (Parts tutorial, and Assemblies)
- Tuesday 08/26/14: 3 hours spent at the Application dev. Workshop
- Thursday 08/28/14: 3 hours training on the ground station, and working with Murphy on SpacePREP
- Friday 08/29/14: 2 hours working with SolidWorks (Assemblies tutorial)

I worked 10 hours this week.

Total Hours Worked: 20

Jeffrey Reed
Week of: August 18-24, 2014

This week I have worked on the Hoperope project with Edwin Orange learning PHP and MySQL. PHP is a language used on the server to work with data from databases. MySQL is a language used to create queries and tables from a MySQL database.

Projects:

Edwin Orange: Hoperope Drug Project

We are taking data about drug arrest and charges from all counties in Kentucky and creating a website with charts, graphs, and a map to show the drug arrest from out data.

Hours Worked:

- Monday, Aug. 18: 2 hours for Edwin Orange project learning PHP(Server side language used to work with data from a database)
- Tuesday, Aug. 19: 3 Hours for Edwin Orange Project learning PHP
- Wednesday Aug 20 : 2 hours learning PHP and MySQL
- Thursday, Aug 21: 4 Worked with PHP and MySQL to create a new Table in database(Had a conference call with Edwin to talk about project}
- Friday, Aug 22 : 3 Hours worked creating the table for the last 90 days of data from the main database table. (Had conference call with Edwin to talk about the data needed in table)

I worked 14 hours this week.

Week of: August 18-24, 2014

This week I have worked on taking data from the last 90 days of data and making a Line Graph and Pie chart using Chart.js(a javascript script used to make graphs and charts) with Edwin Orange for his project Hope Rope.

Projects:

Application and Gaming Development Workshop: At the workshop we worked on how to set up PhoneGap which a development tool that helps to create mobile applications using on HTML,CSS, and Javascript in a text editor. We also looked at how we needed to use node.js, a javascript API that helps with the integration of

PhoneGap. This will be helpful because a client may want a mobile APP made and we learned the foundation of how to get it started.

Hours Worked:

- Monday, Aug. 25: 2 hours for Edwin Orange project working with the Chart.js script and getting all of the defaults for the graph set up so that the data can start being added to it
- Tuesday, Aug. 26: 5 Hours: 2 hours working on getting the data ready using PHP and JSON(a javascript script used to take PHP arrays(data that is separated using commas) and turning it into a javascript array to be used with Chart.js. 3 hours at the Application and gaming Development Workshop working on how to use PhoneGap to develop mobile applications.
- Wednesday: 1.5 hours working on the PHP and JSON needed to work with the server to create a map. Server however went down and Edwin had to change the permissions on it.
- Thursday: 3 hours.Worked with using PHP,JSON, and Javascript to get the graphs created. Ran into some trouble and had to start debugging my code looking for a syntax(grammar) error in the code.

Friday: 3 Hours. Worked on the previous days code and got it debugged and worked on the server that we are using to host the website. Ran into some issues with the hosting software to where it will not allow the code to work. We are currently working on that.

I worked 13.5 hours this week.

Total Hours Worked: 27

Cadence Payne
8/17/14-8/30/14

This week I worked on the following projects:

ARLISS CanSat:

ARLISS CanSat is a satellite designed and developed to be capable of connecting to WiFi throughout its launch. The overall purpose of the wifi capability aspect of the payload is to be able to stream live video down to the ground station that we set up at the time of the launch.

Supervisor: Bob Twiggs, CEO of Teton Aerospace

- Team Mates: MSU Student: William Roach-Barette

- Duties: Creation and design of power supply; assisting in payload preparation; general component mounting; and assisting in the collection, documentation, and presentation of collected data.

Client Work:

I am currently being trained to use the program SolidWorks with Dr. Kevin Brown at ConsiNet so that I may be capable of designing and assembling parts, through simulation, for need based purposes on future projects.

Layout of my work for the dates listed above:

- 8/17: I met with Kevin Bourne and discussed possible future job opportunities as well as general information about the internship. (20 min.)
- 8/17: Met with William Roach-Barette to plan flights for the launch of the ARLISS Cansat. (30 min.)
- 8/27: Began SolidWorks training with Kevin Brown at ConsiNet. Went through a general introduction of the program and how to adequately navigate it. (1 hour)
- 8/30: Continued SolidWorks training. Currently going through tutorial videos on the program and practicing individual part design. (2 hours)
- 8/30: Making progress on integrating raspberry pie into ARLISS Cansat. Optimized camera resolution and frame rate after multiple tests. Got all parts, in our possession at this point in time, prepared for mounting. (3 hours 30 minutes)

Total Hours Worked: 7.5

HQ Report: Interviewed and began hiring new interns. Ensured new hires were properly registered and being paid. Supervised all interns. Interviewed and hired Vista worker for program. Organized workshop and orientation for interns. Coordinated schedules. Tracked and maintained hours. Ensured payroll. Monitored and approved pay. Coordinated working groups and client activity. Phone calls and emails w/ OBOD and W. Bates.
Total Hours: 60

NKU Report: No activity.
Total Hours: 0

SEPTEMBER 2014 REPORTS:

INTERN REPORTS

Tiaunda Ramsey
9/16/-9/30

- On the 16th, I attended the mobile development workshop and meeting for a total of 3 hours. On the 20th, I completed the Digital Worker Assessment form for 3 hours' time.
- On the 22nd, I worked briefly to plan out some possible facts and necessities for a social media powerpoint. I worked for .5 hours. On the next day, the 23rd, I did 2 hours of research for facts and information for the powerpoint.
- On the 27th and 28th, I fixed up a document and rough sketch for my mobile app project for a "compass" of sorts. These documents and their planning took 2 hours each evening. I spent this time ensuring that these were the tools that I would use for the app, this is what I want the app to do, and that this is the most up to date record for the basics.

I have spent approximately an hour and a half on e-mails between Shay for our web project with Sharon Staviski and the various internship e-mails.

Total Hours Worked: 14

Murphy Stratton
September 1-5

I am currently working on researching the broadband initiative and working on the digital CricketSat with Bob Twiggs as well as the TubeSat initiative, both bring business and awareness to his small space business Teton. I'm also working on the destiny module that will be going to the Highlands museum. In the downtime I track satellites and work on enhancing my skill set.

Projects:

Digital CricketSat: The Digital CricketSat is a digitized version of the cricketsat that works with a microprocessor. The device is a STEM tool that teaches basic engineering skills along with programming. I work on the device with Twiggs and it

supports his space business Teton which in turn enhances the need for Broadband in eastern Ky.

TubeSat: The TubeSat is a satellite currently being developed by Bob Twiggs, CEO of Teton Aerospace and a team of students. The TubeSat deployer holds a satellite in it that will be deployed. Currently the paperwork and ICD is being done for the TubeSat and I am helping with that. This also supports his space business Teton which in turn enhances the need for Broadband in eastern Ky.

Destiny Module: The Destiny Module is a replica that we are building for the Highlands Museum. Building it includes building all the electronics that goes inside of it. It will bring business to the Highlands Museum as well as the Space Science Center, which is its own private entity. Bringing business to the SSC and Highlands Museum increases the need for broadband in this region.

Tracking Satellites, CXBN work

- Monday 09/01/2014: 1 hours working on solidworks, 2 hours tracking satellites
- Tuesday 09/02/2014: 1 hour working on ISS installation, 1 hour working with TU-pod
- Saturday 09/06/2014: 5 hours working IOMN, promoting Space Tango and SpacePREP

I worked 10 hours this week

September 8 -11

I am currently working on researching the broadband initiative and working on the digital CricketSat with Bob Twiggs, CEO of Teton Aerospace as well as the TubeSat initiative, both bring business and awareness to his small space business Teton. I'm also working on the destiny module that will be going to the Highlands museum. In the downtime I track satellites and work on enhancing my skill set.

- Monday 09/08/2014: 2 hours working with Bob Twiggs on TU-pod initiative.
- Tuesday 09/09/2014: 2 hours working on ISS installation with Bob Kroll.
- Wednesday 09/10/2014: 2 hours helping Kristen Royse with her solidworks. 1 hour working on my own solidworks.
- Thursday 09/11/2014: 1 hour TU-pod meeting with Twiggs.

I worked 8 hours this week

September 15-19

I am currently working on researching the broadband initiative and working on the digital CricketSat with Bob Twiggs, CEO of Teton Aerospace as well as the TubeSat initiative, both bring business and awareness to his small space business Teton. I'm also working on the destiny module that will be going to the Highlands museum. In the downtime I track satellites and work on enhancing my skill set.

- Monday 09/15/2014: 2 hours working with Bob Twiggs on TU-pod initiative.
- Tuesday 09/16/2014: 2 hours working on ISS installation with Bob Kroll.
- Wednesday 09/17/2014: 2 hours- started doing programming tutorials for C++
- Thursday 09/18/2014: 2 hour TU-pod meeting with Twiggs.
- Friday 09/19/2014: 1 hour Programming tutorials

I worked 9 hours this week

September 22-26

I am currently working on researching the broadband initiative and working on the digital CricketSat with Bob Twiggs, CEO of Teton Aerospace as well as the TubeSat initiative, both bring business and awareness to his small space business Teton. I'm also working on the destiny module that will be going to the Highlands museum. In the downtime I track satellites and work on enhancing my skill set.

- Monday 09/22/2014: 2 hours doing C++ programming tutorials
- Tuesday 09/23/2014: 2 hours doing C++ tutorials
- Wednesday 09/24/2014: 2 hours on solidworks for Kevin, 1 hour research meeting
- Thursday 09/25/2014: 1 hour TU-pod meeting, 1 hour working on Tu-POD.
- Friday 09/26/2014: 2 hours working on C++ tutorials

Total Hours Worked: 38

David Mays
Sep 1-Sep 5, 2014

This week I worked on the following projects:

BeakerSat/TU-POD

BeakerSat is a PICAXE processor based satellite bus developed for the PocketQube form factor. Jordan Healea and I developed BeakerSat under Bob Twiggs. A version of BeakerSat is going to be launched from the ISS and deployed from a TU-POD launcher. The TU-POD deployer is a new deployer designed to launch Tube-Sats, which are satellites in a cylindrical form-factor. The TU-POD launcher is designed to fit within a regular MR-FOD CubeSat Launcher.

Supervisor/Overall Lead: Bob Twiggs – Teton Aerospace

- Team mates: MSU Students: William Roach-Barette, Jenafer Grindrod, Zach Taulbe, Amber Myre, Cody Robinson.
- Duties: Rework of BeakerSat, Development of TU-POD deployment timer.

Client Work:

I am currently working with Jason Belcher, helping him by answering his questions and attempting to figure out what we can do regarding his fledgling company, Appalachian Aerospace Group.

My work this week went as follows:

- Monday: Worked on answering Jason Belcher Questions. Developed Timer PCB. – 5 hours.
- Wednesday: Researched new LDO Voltage Regulator for BeakerSat electronics. Did some packet testing. 5 hours
- Friday: TU-Pod Meeting. Started work making test rig for measurement of deployment speed of launcher. – 5 horus

I worked a total of 15 hours this week.

Sep 8-Sep 12, 2014

This week I worked on the following projects:

Client Work:

I am currently working with Jason Belcher, helping him by answering his questions and attempting to figure out what we can do regarding his fledgling company, Appalachian Aerospace Group.

My work this week went as follows:

- Monday: Worked on answering Jason Belcher Questions. Developed Timer PCB. – 5 hours.

- Wednesday: Researched new LDO Voltage Regulator for BeakerSat electronics. Did some packet testing. 5 hours
- Friday: TU-Pod Meeting. Started work making test rig for measurement of deployment speed of launcher. – 5 horus

I worked a total of 15 hours this week.

Sep 15-Sep 19, 2014

My work this week went as follows:

- Monday: – TU-Pod Meeting. Fabricated antenna for TU-POD engineering model. Made changes to timer circuit PCB. - 8 hours.
- Tuesday: - App Workshop with Mike Bryant. -4 Hours
- Wednesday: Weekly worker meeting. Revised packet format for BeakerSat telemetry beacons and commands. - 6 hours
- Friday: Assisted Murphy Stratton in learning micro-soldering (soldering sub-miniature components.) Developed test rig to demonstrate packet commanding of BeakerSat. – 6 Hours

I worked a total of 25 hours this week.

Sep 21-Sep 26, 2014

My work this week went as follows:

- Monday: Worked on ground station enclosure, as well as command input. – 5.5 hours
- Tuesday: Replaced voltage regulators in test rig. Software development to reduce packet length and provide verification of packet receipt. – 6 hours
- Wednesday: Filled out Digital Worker Assessment. Worker meeting. Continued to teach Murphy micro soldering. Started development of SPI driver. – 7.5 hours
- Thursday: TU-Pod meeting. Found some cautery tips online for deployer. Decided on deployment sequence with Travis Miller. – 6 hours

Total Hours Worked: 80

William L. Roach-Barrette

Week ending Sept. 5

Current Assignment: ARLIS CanSat

Company Assigned: Teton AeroSpace

Accomplished Objectives:

- Built CanSat bodies with the help of machinist Kaden Martin, now going to work with him on drilling mounting holes for hardware during final assembly 5 hours
- Planned final layout of CanSat components on structure 5 hours

Goals For Next Week:

- Work on final assembly and integration of parts into CanSat 5 hours
- Begin final testing of completed satellite 5 hours

Total Hours Worked: 20

Weekly Work/Status Report

Week August 31st – September 6th

Current Assignments: Mt. Sterling Chamber, Center for Regional Engagement, RS Data Systems

Working Group: Rowan and Montgomery

Company Assigned: Print + Pixel

From: Shay Hammond

I spent this week working with two other interns to start a new project for RS Data Systems. I also continued updates on the other sites like Mt. Sterling Chamber and Turkey Trot. I worked with Jessica Robinson at Print and Pixel Creative in Mt. Sterling, KY, as well as Sharon Staviski of RS Data Systems.

- On Monday September 1st, 2014, I spent 3 hours contacting Sharon Staviski, Tiaunda, and Kami about the RS Data Systems website. I also worked on the first mock-up.
- On Tuesday September 2nd, 2014, I spent 3 hours working on the mock-up for RS Data Systems and I sent it to Sharon Staviski.
- On Thursday September 4th, 2014, I spent 2 hours creating a new email account for the Turkey Trot 5K, as well as updating the Registration, Contact, and Sponsor Registration forms.
- On Saturday September 6th, 2014, I spent 1 hour editing the Mt. Sterling Chamber of Commerce Application form.

I was able to work 9 hours this week.

Week September 7th – September 13th

I spent this week working with Tiaunda on the RS Data Systems website, as well as making minor updates to the other sites I'm involved with, including the EKY Helping Ourselves, Turkey Trot, and Mt. Sterling Chamber.

On Monday September 8th, 2014, I spent 3 hours creating a second mock-up for RS Data Systems.

On Tuesday September 9th, 2014, I spent 3 hours working finishing up the second mock-up and I sent it on to Sharon Staviski. She approved the second design, so we will being the process of setting up Wordpress soon.

On Thursday September 11th, 2014, I spent 3 hours fixing more issues with the forms on Turkey Trot and Mt. Sterling Chamber. I also took the time to delete spam comments from the EKY Helping Ourselves website, as well as blocking all of the IP addresses that submitted the comments.

I was able to work 9 hours this week.

Week September 21st – September 27th

This week was spent making minor updates on multiples sites like Mt. Sterling Chamber, Turkey Trot, and Renfro Rock N' Run. I also made small updates to the CRE website, as well as began the process of creating a Wordpress site for RS Data Systems.

- On Sunday September 21st, 2014, I spent 2 hours forwarding information from the Turkey Trot Registration Forms to the appropriate person, as well as fixing the issue.
- On Monday September 22nd, 2014, I spent 2 hours communicating with Jessi about the Fusion Fitness website, as well as making a few minor updates to all of the sites in order to block SPAM.
- On Wednesday September 24th, 2014, I spent 3 hours getting a Wordpress site up and running for RS Data Systems.
- On Friday September 26th, 2014, I spent 2 hours making updates to the CRE website, as well as beginning work on the Fusion Fitness site.

I was able to work 9 hours this week.

Total Hours Worked: 27

Kristen Royse

September 1 –September 7, 2014

I am currently working on enhancing my 3D modeling skills with Kevin Brown at ConsiNet through his SolidWorks course. This week, Kevin Brown gave me my assignment that I will using SolidWorks to do when he feels I have reached a level to do it. I am also working the Jennifer Carter and Murphy Stratton on building a new program designed to recruit young women to get involved with space. The program is called SpacePREP. On Saturday, I attended International Observe the Moon Night at the Space Science Center, where I sat up a table to promote the Kentucky Innovation Network along with SpacePREP/Trek.

Projects:

SolidWorks: SolidWorks is solid modeling CAD software that runs on Microsoft Windows. SolidWorks is currently used by engineers and designers at over 165,000 companies worldwide. The software is used frequently by engineers to model new, and to enhance current satellite designs, and even specific parts of a satellite. What is built on SolidWorks can be taken and actually built inside of a machine shop. Kevin Brown who I am working under currently feels this CAD software would be beneficial for me to learn as an introduction to satellite and software design. This week Kevin actually told me what I would be doing once I complete the SolidWorks course and that will be to build solar panels that will eventually go on CXBN-2, a satellite being built by MSU. Cadence Payne will also being assisting me on this project, as she is in the SolidWorks course too.

SpacePREP: SpacePREP, a program being built by Jennifer Carter will be used to recruit young women to get involved with not only space, but STEM in general. Murphy, and I took time out this week to meet and check on the status of the supplies that will need to be ordered for SpacePREP. Such items include safety goggles, solder, batteries, name tags, etc. The growing interest in STEM allows for potential small businesses to develop in the future, and more opportunity for students to fulfill tasks we provide to small businesses.

International Observe the Moon Night (IOTMN): Saturday, September 6 was the 5th annual IOTMN held at the Space Science Center. Earlier in the week, Jennifer Carter proposed an idea to me. The idea was that I set up a table during the event to help promote the Kentucky Innovation Network as well as SpacePREP/Trek. Since the Innovation Network sponsors the program, we thought it would be good advertising of both. At the table, we had information packets, business cards, and actually hands on displays of things students do when they attend SpacePREP/Trek or become involved with the Innovation Network.

- Tuesday 09/02/14: 2 hours working with SolidWorks
- Wednesday 09/03/14: 2 hours working with SolidWorks, 1 hour @ Student Research Meeting going over CXBN roles (Solar Panels)
- Thursday 08/28/14: 1 hour meeting with SpacePREP committee checking on supplies status
- Saturday 09/06/14: 4 hours @ International Observe the Moon Night (7:00pm-11:00pm)

I worked 10 hours this week.

Sept. 8-12

I am currently working on enhancing my 3D modeling skills with Kevin Brown at ConsiNet through his SolidWorks course. Kevin Brown has now given me the assignment that I will using SolidWorks to do when he feels I have reached a level to do it. I am also learning how to operate the ground station and observing satellite passes, a skill I will use while working with Kevin and his company AstroDev.

Projects:

Ground Station: Training on the ground station is essential to my success in working for Kevin Brown. Since his small business is building and selling radios, it's imperative that I learn how to communicate with the radios being used, wither it be by MSU or other space industries. The ground station does just that. Communicates with radios on satellites. In order to get practice on the ground station, I will be taking on satellite passes with other students at the Space Science Center and Kevin.

- Monday 09/08/14: 2 hours working with SolidWorks (1U CubeSat)
- Tuesday 09/09/14: 3 hours working with SolidWorks (1U CubeSat), and meeting with Jennifer Carter and Murphy Stratton on the status of SpacePREP
- Thursday 09/11/14: 1 hour of ground station training, 2 hours of SolidWorks
- Friday 09/12/14: 2 hours working with SolidWorks (1U CubeSat)

I worked 10 hours this week.

September 22-26

I am currently working on enhancing my 3D modeling skills with Kevin Brown at ConsiNet through his SolidWorks course. Kevin Brown has now given me the assignment that I will be using SolidWorks to do when he feels I have reached a level to do it. On Tuesday, I completed my digital assessment. I am also working on building a workshop that will be presented to local schools in order to spread information about broadband and the Innovation Network.

Projects:

Digital Assessment: By filling out this digital assessment, all of my skills are now on file. Also, the level at which I can perform each skill is mentioned also. The assessment was mandatory, and worth three work hours.

Workshop: By building this workshop and presenting to the local schools we will spread information and knowledge about broadband but also advertise the Innovation Network and the services and opportunities the Innovation Network offers. At this point, I have had and am setting up meetings to gather information to outline the workshop. And also researching the broadband topic. The dates and time will be decided as the workshop develops.

- Monday 09/22/14: 2 hours working with SolidWorks
- Tuesday 09/23/14: 3 hours doing Digital Assessment
- Thursday 09/25/14: 1 hour meeting with Jennifer Carter, and 1 hour conducting broadband research
- Friday 09/26/14: 2 hours researching broadband, and working with SolidWorks

I worked 10 hours this week.

Total Hours Worked: 30

Jeffrey Reed
Week of: September 16-19, 2014

Spent majority of week working with the website CMS modX and Chart.js and seeing how I was going to code it all and get it to work correctly and functionally. I am learning a lot but still behind in what is needed to be able to do what is needed efficiently and effectively.

Projects:

Edwin Orange project name: Hope Rope Drug Project

We are taking data from the court systems in Kentucky about drug arrest and charges and using this to make graphs and maps showing the distribution of arrest in Kentucky.

Hours Worked:

- Tuesday, Sep 16 : 4 hours. 1 Hour working on the CMS that Edwin is using, and 3 hours at the workshop with Mike Bryant
- Wednesday: 2 Hours installing chart.js on server and setting it up to be used for upcoming charts used on the website.

- Thursday: 5 Hours. Two hours making a sample chart on the website to see how it is configured and how to integrate into the ModX CMS. Three hours filling out Programming Inventory
- Friday: 2 Hours. Continued working on Chart and CMS to see how I was going to incorporate the data from the database into our charts and what code was going to be needed.

I worked 13 hours this week.

Week of: September 22-26, 2014

This week I worked on learning more Python to be able to complete a task that Edwin had asked me to do. I am trying to take data from the MySQL database and total it based on date and to set the dates to weeks instead of individual days. The code for this is extremely complex and is going to take a lot of learning to do. Also started to work on JSON and what all it is about.

Hours Worked:

- Monday Sep 22: 2 hours. Looked at the python code needed to handle the task that Edwin has set before me.
- Tuesday, Sep 23 : 2 hours. Worked on Python functions and incorporating date and time into them.
- Wednesday Sep 24: 2 hours: Continued to work on the Python functions and libraries and started to break down the code piece by piece to start handling the events.
- Thursday Sep 25: 3 Hours; Started to write the code needed to handle the date intervals and totaling of the MySQL data. Got stuck and had to do some research on what was needed.
- Friday Sep 26: 3 Hours. Continued to work on the research and writing of the code to take the dates and turn them into weeks and to total them. Ran into an issue on the server and started to learn JSON and how to work it into my code.

I worked 12 Hours this week

- Monday Sep 29: 2 Hours: Continued to work with the JSON and started writing code that will pass a variable from PHP to a JSON file that can be used by Chart.js
- Tuesday Sep 30: 3 Hours: Working with JSON, MySQL, PHP and Javascript to write a JSON file with totaled values from the MySQL database that can be passed along to the Chart.js API

I worked 5 hours for these 2 days..

Total Hours Worked: 30

Cadence Payne
8/31/14-9/16/14

This week I worked on the following projects:

ARLISS CanSat:

ARLISS CanSat is a satellite designed and developed to be capable of connecting to WiFi throughout its launch. The overall purpose of the wifi capability aspect of the payload is to be able to record as well as stream live video down to the ground station that we set up at the time of the launch.

Supervisor: Bob Twiggs, CEO of Teton Aerospace

- Team Mates: MSU Student: William Roach-Barette
- Duties: Travel to Nevada to assist in the launch of CanSat. Help to organize data collected from physical satellite launch as well as compile data into a presentation that will be presented at ARLISS conference. Other duties fell on an as needed basis in regards to assisting other groups in the documentation, launch, and recovery of their personal payloads.

Client Work:

I am currently being trained to use the program SolidWorks with Dr. Kevin Brown at ConsiNet so that I may be capable of designing and assembling parts, through simulation, for need based purposes on future projects.

Layout of my work for the dates listed above:

- 9/1/14: Continued Solidworks training. Focused on the assembly aspects of the program. Practiced by buildind multiple subassemblies for a windmill and then assembling them into a final, fully functional product. (2 hours)
- 9/3/14: General work on ARLISS. Researched pin information as well as tested for continuity between pins on the wifi radio to solidify location for power supply connection. Researched part functioning capabilities under certain regulated voltages. Soldered our power supply as well as tested it with the raspberry pi to ensure it functioned properly, it succeeded! (3 hours)
- 9/7/14: Solidworks training. Focused on the drawing aspects of the program: replicated both a part and assembly drawing. (1 hour)
- 9/10/14: In Nevada: Met with Ken Biba in regards to future possibilities for the progress of our CanSat. Discussed results of satellite launch as well as ideas for a

more advanced processing system that would eliminate the one error we had during launch. (1 hour)

- 9/10/14: In Nevada: Assisted professor Twiggs as well as Andreas and his student team from Costa Rica in the search and recovery of their payload. (2 hours)
- 9/11/14: In Nevada: Compiled information and composed presentation of our satellite and its successes for the group conference. (1 hour)
- 9/12/14: In Nevada: Attended ARLISS conference and observed presentations of the various payloads as well as presented our satellite's results with William Roach-Barrette. (2 hours 30 min)

9/16/14-9/30/14

This week I worked on the following projects:

Client Work:

I am currently being trained to use the program SolidWorks with Dr. Kevin Brown at ConsiNet so that I may be capable of designing and assembling parts, through simulation, for need based purposes on future projects. Currently working on various Solidworks' projects assigned in order to gain the adequate experience needed to design the specific parts needed for Kevin.

Layout of my work for the dates listed above:

- 9/17/14: Solidworks practice with 1U CubeSat model. Made model based off drawing with proper dimensions. Practiced with drawing, assembly, and mating. (1 hour)
- 9/22/14: Solidworks training. Working on designing a model of the Hubble telescope without dimensions or instruction. Currently working on the different subassemblies for the body and antenna. (1 hour)
- 9/27/14: Continued Solidworks training. Successfully created the subassemblies for both antennas as well as both solar panels and connected all assemblies to the body of the Hubble. Began working on the aperture flap. (4 hours)
- 9/29/14: Continued Solidworks training. Successfully created and attached aperture flap, finished projected entirely! (1 hour)

In total I worked 7 hours for this pay period**.**

Total Hours Worked: 20

Zane H. Dixon
Week of September 29-30, 2014

Digital Worker Assessment … recorded 3 hours

Total Hours Worked: 3

HQ Report: Continued supervising interns. Began organizing workshops in community. Helped launch Rural Up organization and SpacePrep organizations. Coordinated multiple schedules. Tracked and maintained intern hours. Ensured payroll. Monitored and approved pay. Coordinated working groups and client activity. Phone calls and emails w/ OBOD and W. Bates. Attended IdeaFest to learn about coding efforts and promote project. Worked with Connected Nation to attempt to launch workforce training project. Organized NKU effort to build web sites for clients. Began planning annual conference.
Total Hours: 70

NKU Report: Organized project to build websites for clients. Began working w/ KY Innovation Network to identify clients. Met w/ various agricultural prospects and contacts in Fleming, Mason and Nicholas County.
Total Hours: 30

OCTOBER 2014 REPORTS:

INTERN REPORTS

Tiaunda Ramsey
Period Ending October 15

This pay period was spent on an app development project for the app temporarily titled "COMPASS".

- On Wednesday, October 1, time was spent from 8:30 to 10p.m. reviewing the code written for a COMPASS type app by Mike Bryant.
- On Friday, October 3, I spent 1 hour between 7:00 and 8:00p.m. creating a state diagram for my app.
- On October 4, between 2:00 and 2:30p.m., I created a UML class diagram for my app. Between 11:00p.m. and 12:00a.m. on Monday the 6th, I began work on a UML Event diagram.
- On Tuesday, October 7, I continued my work on the Event diagram from 4:00p.m. to 4:30. I finished the Event diagram between 9:00 and 9:45p.m.
- On Wednesday, October 8, starting at 9:30a.m., I worked a collective 20 minutes assisting Vicci with understanding past projects of the internship.
- On Friday , October 10, The conclusion of my work for the week was spent from 7:00 to 10:00p.m Constructing a Software Requirements Definition document and laying out more detailed requirements.
- On Sunday, October 12, I began the next week of the pay period between 4:00 and 6:00p.m. working on a Software Requirement Specification document and brainstorming methods of the app.
- On Monday of that week, I worked an hour from 7:00 to 8:00p.m. on the SRS document. The conclusion of the pay period was finishing the requirements planning and the SRS document, as well as digitizing the diagrams from 8:00p.m. to 11:00p.m.

1 hour was dedicated to e-mails over the pay period. I worked 15.58 for the pay period.

10/15/14 to 10/31/14

I worked on my compass app during the pay period.

I worked a total of 5 hours for the pay period.

- On 10/25, I worked 2 hours on creating the points for locations within my app.
- On 10/27, I worked 2 hours on figuring out how to move the points in my app.

I also answered e-mails and communicated regarding my app for 1 hour total.

Total Hours Worked: 20.58

Murphy Stratton
Week ending October 3

I am currently working on researching the broadband initiative and working on the digital CricketSat with Bob Twiggs as well as the TubeSat initiative, both bring business and awareness to his small space business Teton. I'm also working on the destiny module that will be going to the Highlands museum. In the downtime I track satellites and work on enhancing my skill set.

Projects:

Digital CricketSat: The Digital CricketSat is a digitized version of the cricketsat that works with a microprocessor. The device is a STEM tool that teaches basic engineering skills along with programming. I work on the device with Twiggs and it supports his space business Teton which in turn enhances the need for Broadband in eastern Ky.

TubeSat: The TubeSat is a satellite currently being developed by Bob Twiggs, CEO of Teton Aerospace and a team of students. The TubeSat deployer holds a satellite in it that will be deployed. Currently the paperwork and ICD is being done for the TubeSat and I am helping with that. This also supports his space business Teton which in turn enhances the need for Broadband in eastern Ky.

Destiny Module: The Destiny Module is a replica that we are building for the Highlands Museum. Building it includes building all the electronics that goes inside of it. It will bring business to the Highlands Museum as well as the Space Science Center, which is its own private entity. Bringing business to the SSC and Highlands Museum increases the need for broadband in this region.

Tracking Satellites, CXBN work

- Monday 09/29/2014: 2 hours doing C++ programming tutorials
- Tuesday 09/30/2014: 2 hours doing C++ tutorials, 1 hour working on solidworks for Kevin Brown at ConsiNet
- Wednesday 10/01/2014: 1 hour working with Kristen Royce on C++
- Thursday 10/02/2014: 1 hour TU-pod meeting, 1 hour working on Tu-POD.
- Friday 10/03/2014: 2 hours doing C++ tutorials

I worked 10 hours this week

October 6-9

I am currently working on researching the broadband initiative and working on the digital CricketSat with Bob Twiggs as well as the TubeSat initiative, both bring business and awareness to his small space business Teton. I'm also working on the

destiny module that will be going to the Highlands museum. In the downtime I track satellites and work on enhancing my skill set.

- Monday 10/06/2014: 2 hours doing C++ programming tutorials
- Tuesday 10/07/2014: 2 hours doing C++ tutorials, 1 hour working with Kristen on C++ tutorials
- Wednesday 10/08/2014: 1 hour research meeting, 1 hour working on soldiworks

Fall break: 10/09/14-10/12/14

I worked 7 hours this week

Week of: October 20th – October 24th, 2014

I am currently working on researching the broadband initiative and working on the digital CricketSat with Bob Twiggs, CEO of Teton Aerospace as well as the TubeSat initiative, both bring business and awareness to his small space business Teton. I'm also working on the destiny module that will be going to the Highlands museum. In the downtime I track satellites and work on enhancing my skill set.

Projects:

Kien's Company: I am assisting Kien Dang with his business startup. I am building his website through dropbox and finding which vendors would be best for his company.

Programming tutorials: In my free time I am doing some programming tutorials to bone up on my programming skills.

Tracking Satellites, CXBN work

- Monday 10/20/2014: 2 hours doing C++ programming tutorials, 1 hour working on Kien's business.
- Tuesday 10/21/2014: 2 hours doing C++ tutorials, 1 hour working on solidworks for Kevin Brown
- Wednesday 10/22/2014: 3 hours working on Kien's business.
- Thursday 10/23/2014: 1 hour TU-pod meeting, 2 hours C++ tutorials

I worked 12 hours this week

Week of: October 27th – October 31st, 2014

I am currently working on researching the broadband initiative and working on the digital CricketSat with Bob Twiggs as well as the TubeSat initiative, both bring business and awareness to his small space business Teton. I'm also working on the

destiny module that will be going to the Highlands museum. In the downtime I track satellites and work on enhancing my skill set.

- Monday 10/27/2014: 2 hours on solidworks for Kevin Brown, 1 hour C++ programming tutorial
- Tuesday 10/28/2014: 3 hours on Kien's business, (Finding best vendors)
- Wednesday 10/29/2014: 2 hours on Solidworks, 1 hour C++ programming tutorial
- Thursday 10/30/2014: 2 hours on Kien's business

Total Hours Worked: 40

David Mays

Sep 29-Oct 3, 2014

This week I worked on the following projects:

BeakerSat/TU-POD

BeakerSat is a PICAXE processor based satellite bus developed for the PocketQube form factor. Jordan Healea and I developed BeakerSat under Bob Twiggs, CEO of Teton Aerospace. A version of BeakerSat is going to be launched from the ISS and deployed from a TU-POD launcher. The TU-POD deployer is a new deployer designed to launch Tube-Sats, which are satellites in a cylindrical form-factor. The TU-POD launcher is designed to fit within a regular MR-FOD CubeSat Launcher.

Supervisor/Overall Lead: Bob Twiggs – Teton Aerospace

- Team mates: MSU Students: Jenafer Grindrod, Zach Taulbe, Amber Myre, Cody Robinson.
- Duties: Rework of BeakerSat, Development of TU-POD deployment timer.

My work this week went as follows:

- Monday: Populated timer board for testing. Calculated wait interval. – 5.5 hours
- Tuesday: Looked for different source of cautery tips. Changed packet receive format to use less data. – 3.5 hours
- Wednesday: Made repairs to ground station board. Project meeting. Populated new beakersat board – 5 hours
- Thursday: Made changes to packet verification system. Made changes to packet command system. Went through PCB designs citing mistakes. – 6 hours

I worked a total of 20 hours this week.

Oct 6-Oct 10, 2014

iMy work this week went as follows:

- Monday: Helped test exit velocity of spring used in TU-Pod. Answered some emails about details of the project. – 5.5 hours
- Tuesday: Looked for suitable diode replacements for batteries. Tested thermal characteristics of diodes. – 3.5 hours
- Wednesday: Met with Travis regarding board size. Helped figure out best way to tie batteries together. – 5 hours
- Thursday: Team meeting, Skyped with other team members. Desoldered components for Travis. – 6 hours

I worked a total of 20 hours this week.

Oct 13-Oct 17, 2014

My work this week went as follows:

- Monday: Skyped with Eric Tapio. Populated an packaged up BeakerSat boards and timer circuit to send him – 5.5 hours
- Tuesday: Produced schematics to send to Eric. – 3.5 hours
- Wednesday: Team meeting. Helped determine screw placement on boards. Packaged up documentation to send. – 5 hours
- Thursday: Wrote lengthy email detailing TU-Pods deployment sequence, the purpose of all of the boards on the mission, and why they are important. Made diagrams to send to Eric. – 6 hours

Oct 20-Oct 24, 2014

My work this week went as follows:

- Monday: Created flowcharts for BeakerSat software to send to Eric. Sent him list of things that needs to be worked on. – 4.5 hours
- Tuesday: Removed antenna connector from test beakersat. Also removed headers. Cleaned board and prepared electronics for thermal vac. – 5 hours
- Thursday: Team meeting. Worked on research for Jason Belcher – 5 hours

I worked a total of 14.5 hours this week.

Total Hours Worked: 54.5

Weekly Work/Status Report

Week October 19th – October 25th

Current Assignments: Fusion Fitness, Center for Regional Engagement, RS Data Systems

Working Group: Rowan and Montgomery

Company Assigned: Print + Pixel

From: Shay Hammond

I spent this week working with Turkey Trot to make sure they had all registration information for their race, as well as designing their t-shirts. I also created a new website for Kentucky Health Center Network and continued working on the Fusion Fitness site.

- On Tuesday October 21st, 2014, I spent 4 hours sending registration information to Turkey Trot organizers, as well as creating a website for Kentucky Health Center Network.
- On Wednesday October 22nd, 2014, I spent 5 hours making the Fusion Fitness site more mobile, as well as meeting with Jessi.
- On Thursday October 23rd, 2014, I spent 1 hour creating the Turkey Trot t-shirt design.

I was able to work 10 hours this week.

Week October 26th – October 30th

I continued working with Turkey Trot to make sure they had all registration information for their race, as well as continuing work on the Fusion Fitness site. I also met with Jessi to discuss our current and upcoming projects.

- On Tuesday October 28th, 2014, I spent 3 hours working on Turkey Trot t-shirt designs and the Fusion Fitness site.
- On Wednesday October 29th, 2014, I spent 5 hours meeting with Jessi and working on the Fusion Fitness site.
- On Thursday October 30th, 2014, I spent 2 hours sending the Turkey Trot t-shirt designs to the printer as well as sending them more registration information.

Total Hours Worked: 20

Kristen Royse
Week ending October 4

I am currently working on enhancing my 3D modeling skills with Kevin Brown at ConsiNet through his SolidWorks course. Kevin Brown has now given me the assignment that I will be using SolidWorks to do when he feels I have reached a level to do it. I am also currently building a workshop on mobile app development. The workshop will consist of a pre-class to gain interest, and a core class which will cover the basic of building an application.

Projects:

SolidWorks: SolidWorks is solid modeling CAD software that runs on Microsoft Windows. SolidWorks is currently used by engineers and designers at over 165,000 companies worldwide. The software is used frequently by engineers to model new, and to enhance current satellite designs, and even specific parts of a satellite. What is built on SolidWorks can be taken and actually built inside of a machine shop. Kevin Brown who I am working under currently feels this CAD software would be beneficial for me to learn as an introduction to satellite and software design. SolidsWorks can be used to design radios, which is what his small business is based around.

Workshop (pre-class, app development): By building this workshop and presenting to the local schools we will spread information and knowledge about broadband but also advertise the Innovation Network and the services and opportunities the Innovation Network offers. This will also build interest in learning new programming languages and applying them to satisfy other's needs. At this point, I am learning more about the subject so that I can speak to the students and make them excited for the class. By emailing, setting up meetings, and questioning reliable sources. The dates and time will be decided as the workshop develops.

- Monday 09/29/14: 3 hours working on SolidWorks and Workshop
- Tuesday 09/30/14: 2 hours working on Workshop
- Wednesday 10/1/14: 3 hours working on SolidWorks and Workshop
- Friday 10/3/14: 2 hours working on Workshop

Week of: October 20 – October 26, 2014

I am currently building a workshop on mobile app development. The workshop will consist of a pre-class to gain interest, and a core class which will cover the basic of building an application. The Workshop building has been broken down into

developing steps. Content, outreach, advertising, deciding a date, and making it happen.

Projects:

Workshop (pre-class, app development): By building this workshop and presenting to the local schools we will spread information and knowledge about broadband but also advertise the Innovation Network and the services and opportunities the Innovation Network offers. This will also build interest in learning new programming languages and applying them to satisfy other's needs. At this point, I am beginning to build the power point for the workshop. The next step will be outreach.

- Monday 10/20/14: 2 hours working on Workshop
- Tuesday 10/21/14: 4 hours working on Workshop
- Thursday 10/23/14: 3 hours working on Workshop
- Friday 10/24/14: 1 hour doing assignment for Eric Thomas

Total Hours Worked: 20

Jeffrey Reed
Week of: Oct 6 - 15, 2014

Met with Zane and got him started on some assignments for the project and caught him up to everything that was going on. Spent most of the week writing PHP that would create a JSON file and that would Sum up all data in a certain field for 7 day increments that could be used to put into the JSON file.

Projects:

Edwin Orange project name: Hope Rope Drug Project

We are taking data from the court systems in Kentucky about drug arrest and charges and using this to make graphs and maps showing the distribution of arrest in Kentucky.

Hours Worked:

- Monday Oct 56h- 3 Hours Met with Zane and explained to him the project, what we needed, how far along we was, and what we was doing the project for.
- Tuesday Oct 7th – 2 Hours - Worked on how to create the JSON file needed and how to parse it whenever the data was in it to create a Javascript array that could be used with Chartist.js

- Wednesday Oct 8th – 3 Hours- Wrote the PHP code needed to sum columns and turn the 90 days into 12 weeks and give a total for each week that could be passed to a JSON file.
- Thursday Oct 9th – 3 Continued to work on PHP code needed to write JSON file and studied up on what code was needed and how it was to be used.
- Friday oct 10th 3 hours - Created a new table in MySQL that would handle the totals of each week for 12 weeks for 6 different categories of drugs. Researched JSON some more as I got stuck on how to create and parse the JSON file.

I worked 14 Hours this week.

- Monday Oct 13th: 2 hours. Worked on PHP and MySQL query to create a new table that I had previously been working on. Got it created and got a python file from Zane, looked it over and passed it on to Edwin.
- Tuesday oct 14th: 0 hrs
- Wednesday October 14th. 2 hours. Created Zane a database that he could use to test his python, MySQL, and Javascript on without hurting the integrity of the current database. Also contacted the Owner of All Occasion Flowers and spoke with her about her needs, an introduction and set up a meeting.

Week of: Oct 27th - 31, 2014

Worked on the Edwin Orange project, getting the Python to work for the dates in the database with Zane. Worked on the server to get Chartist.js to work and revert it back to Chart.js. A lot of troubleshooting happened this week

Hours Worked:

- Monday Oct 27th – 3 hours – Spoke with Zane and Edwin about Zanes python that was wrote, it didn't work so started to work out a day that Zane and I could meet to look it over. Started to work with Chartist.js and the server and broke it.
- Tuesday Oct 28th – 3 hours – Got the Javascript to work again on the server after causing it to not function the previous day trying to install Bower and Chartist.js. Got the graphs to work with Chart.js but back to square one on the Chartist.js.
- Wednesday oct 29th 2 hours – Spoke with Edwin and worked on the server trying to get logged on and getting node.js installed
- Thursday Oct 30th 2 hours- Spent more time working on the server to no avail. Tried to troubleshoot with Edwin
- Friday oct 31st 2 hours- Set up a meeting with Zane to get him access to the server, checked in with his progress and what he needed from me and what I could do to help. Worked on server still.

I worked 12 hours this week.

Total Hours Worked: 26

Cadence Payne
10/01/14-10/15/14

This week I worked on the following projects:

Client Work:

I am currently being trained to use the program SolidWorks with Dr. Kevin Brown at ConsiNet so that I may be capable of designing and assembling parts, through simulation, for need based purposes on future projects. Currently working on various Solidworks' projects assigned in order to gain the adequate experience needed to design the specific parts needed for Kevin and his business, Consinet.

Layout of my work for the dates listed above:

- 10/6/14: Solidworks training. Currently working on composing a 2U cubesat model with 2 foldout solarpanels. Finalized actual body of satellite and correctly figured out how to mate the three individual pieces of the hinge so that it may function properly.

- 10/15/14: Continued solidworks training. Created both solar panels and attached them together through a mate with the hinge I previously created. Also, attached another hinge to the body of the satellite for solar panel mounting.

In total I worked 2.5 hours for this pay period.

10/16/14-10/31/14

This week I worked on the following projects:

Client Work:

I am currently being trained to use the program SolidWorks with Dr. Kevin Brown at ConsiNet so that I may be capable of designing and assembling parts, through simulation, for need based purposes on future projects. Currently working on various Solidworks' projects assigned in order to gain the adequate experience needed to design the specific parts needed for Kevin and his business, Consinet.

Layout of my work for the dates listed above:

- 10/17/14: Solidworks. 2U model completed! I corrected all the mates on the body, redid the hinge mates on solar panels, mated body of CubeSat to hinged solar panels,

and finalized all mates for adequate hinge movement. (2 hours)

- 10/20/14: Solidworks. Assigned new boat designing project. Measured and recorded perimeters of model boat and attempted to begin design. (1 hour)
- 10/22/14: Solidworks. Continued boat designing process. Redid sketch about 5 times before finally settling on an appropriate design. (1 hour 20 min)
- 10/27/14: Solidworks. Given new addition to assignment. Redid boat body design in order to fit GPS. Continued working on overall design of boat. (1 hour)
- 10/29/14: Solidworks. Continued working on boat. Began designing the placement holder for GPS as well as working on extrusions for GPS. Given another addition to assignment. Began designing placement for the circuit board. (1 hour 30 min)

Total Hours Worked: 9.5

Zane H. Dixon
Week of October 25-31, 2014

After last week's progress, I have started learning the urllib2 library in python and looking into learning more stuff about Cron Jobs. I arranged a meeting for the following Friday the 7th to meet with Jeff so we can figure the entirety of the database and why it is not working correctly.

Project – Edwin Orange:

- Oct 25th – 4 hours; 7:00 PM- 11:00PM;
- I looked back at my old python book from home, it had some minor details over the url library in python, mainly about web page data manipulation, with it you can call upon specific data. It appears as if the person who created the code were using was experimenting between the beautiful soup and the urllib2. I then practiced using the two, and noticed the syntax for beautiful soup was easier.
- Oct 28th- 2 hours; 6:00 PM – 8:00 PM;
    - I watched some youtube videos on explaining what Cron Jobs are and how there implemented. They run semi-autonomously, and activate code

or script based on a schedule or command. This look more like Jeff's territory than mine, however this does look like how they implemented the python code and how they got it to work.

- Oct 29th – 1.5 hours; 5:00 PM – 6:30 PM;
    - I practiced making working code for the urllib2 library and I worked on integrating it with beautiful soup. After an hour I successfully got the program to work. Then I proceeded to optimize the code in case I needed to use little bits of it for our code.

Total Hours Worked: 7.5

Daniel Yeary
Week ending October 4

- On Sunday September 28th, I filled out the Digital Worker's Assessment and emailed this form back to Mrs. Vicci Lewis for three hours of work. (3 hours)

- On Tuesday September 30th, I met with Mrs. Lewis . We talked about BlastZone Vapez. We called owner and I got his email and we talked a little bit about creating a website for him. I emailed him after the meeting and he has not responded to date. (20 minutes)

- On Thursday October 2nd, I sat in on a conference call with Mrs. Lewis, Mr. Bourne, and the people at Highlands Museum. We talked about updating their current website with different colors, not so much blog format, and to fix certain links. (30 minutes)

10/5/14 - 10/12/14

- 10-6 - emailed with Mrs. Lewis and Shay (15min)

- 10-8 - started looking at Highlands Museum project, looked at different colors for

site, researched applications of PayPal (1 hour)

- 10-10 - phone conversation with Emily Roush from Highlands Museum about website (45 minutes),research on WordPress (1 hour),using administration level access granted by Emily Roush to look at website on WordPress (1 hour and 30 minutes) possible new themes for website (1 hour)

10/12/14 - 10/19/14

10-15 - phone call with Mike Wilkerson from Blastzone Vapez (15min)

10-16 - found a great hosting site for Blastzone called Big Commerce. I had a free trial account

and looked at all the different options available with this site. (4 hours)

10-17 - phone call with Mike Wilkerson, explaining Big Commerce and showing the benefits and costs of

using this option to host website, agreed to use this site (1 hr)

research with PayPal and WordPress for Highlands Museum, starting on calendar of

events (3 hrs)

10-19-14 to 10-26-14

- 10-20 - research on Big Commerce and extras (1 hr)
- researched other e-cig websites to see options and layout (2 hours)
- 10-21 - started my own free trial on Big Commerce to see actual advantages and to look around at other options. (4 hours)
- 10-22 - phone call with Emily from Highlands Museum. Talked about getting access to admin account and figuring out where the server is. (1 hr)
- 10-23 - phone call with Mike Wilkerson. We decided to use Big Commerce and use this to make the website. (1 hr)

10-29-14 to 10-30-14

- 10-29 - Emailed with Emily from Highlands Museum. They found their server and are updating WordPress (15 minutes), Started the free trial on Big Commerce for Blastzone Vapez website (2 hrs)
- 10-30 - Emailed with Mike Wilkerson about different categories for Blastzone's website. Updated the site (2 hrs)

Total Hours Worked: 30

HQ Report: Continued supervising interns. Organized 3 workshops during month to promote broadband: one on film, two on coding. Also began outreach for SpacePrep. Coordinated multiple interns' schedules. Tracked and maintained hours. Ensured payroll. Monitored and approved pay. Coordinated working groups and client activity. Phone calls and emails w/ OBOD and W. Bates. Finalized plans for annual conference in Nov.
Total Hours: 70

NKU Report: Identified three clients for web services: farm to table enterprises. Began advising clients on web site development and provided basic instruction in web services. Registered domains for clients Charlie Masters. Continued efforts to identify other clients that needed web development
Total Hours: 30

NOVEMBER 2014 REPORTS:

INTERN REPORTS

Tiaunda Ramsey
11/01 – 11/15

- On 11/06, I spent time from 9:20PM to 11:10PM researching methods to move points around the app screen.
- On Monday, 11/10, from 3:10pm to 4:30pm, I attended the Broadband Internship meeting. For the remainder of the week, I worked on my Compass app.
- On Wednesday, 11/12, I worked on software dependencies and execution diagrams from 7:00pm to 9:00pm.
- On Thursday, 11/13, from 2:15 to 6:30pm, I had a Skype meeting with Mike Bryant, followed by research and coding with storage APIs.
- On Friday, 11/14, I spent 2 hours from 8:00pm to 10pm working with Google map APIs.

I spent 1 and a half hours total on e-mails, mainly scheduling meetings.

Total Hours Worked: 12.92

November 15 to November 30

I worked 20 hours.

The entirety of my two week period was spent developing "Footpints", a personal app that is currently in development. The hours span over many days, but the specifics of each hour vary.

- Monday, November 17 from 9 to 11 pm.
- Tuesday, November 18, from 7 to 10 pm.
- Wednesday, November 19 from 8:30 to 9:45 pm.
- Thursday, I worked from 9:15 to 10 pm.
- Friday from 8:30 to 11 pm.
- Saturday, November 22, I worked from 3 to 6 pm

For the week of November 30

- Monday, from 7:30 to 8:45 pm.
- Tuesday, November 25, from 7 to 10 pm.
- Wednesday, November 26th, between the hours of 4:00 and 7:15 pm.

The aspects that I worked on were coding, feature testing, and research. Specifically, I developed the interface, and created methods for location saving, info windows, and map refreshing. Information is now displayed to the interface: coordinates. The map is initiated (Google Maps). The locations appear on the map. The user can enter details of the location. Each aspect required research of methods and JavaScript functions and tutorials. Meetings and communication with Mike Bryant is included in the development.

The app is close to a working alpha stage.

Murphy Stratton
November 3-6

I am currently working on researching the broadband initiative and working on the digital CricketSat with Bob Twiggs, CEO of Teton Aerospace as well as the TubeSat initiative, both bring business and awareness to his small space business Teton. I'm also working on the destiny module that will be going to the Highlands museum. In the downtime I track satellites and work on enhancing my skill set.

Projects:

Digital CricketSat: The Digital CricketSat is a digitized version of the cricketsat that works with a microprocessor. The device is a STEM tool that teaches basic engineering skills along with programming. I work on the device with Twiggs and it supports his space business Teton which in turn enhances the need for Broadband in eastern Ky.

TubeSat: The TubeSat is a satellite currently being developed by Bob Twiggs, CEO of Teton Aerospace and a team of students. The TubeSat deployer holds a satellite in it that will be deployed. Currently the paperwork and ICD is being done for the TubeSat and I am helping with that. This also supports his space business Teton which in turn enhances the need for Broadband in eastern Ky.

Destiny Module: The Destiny Module is a replica that we are building for the Highlands Museum. Building it includes building all the electronics that goes inside of it. It will bring business to the Highlands Museum as well as the Space Science Center, which is its own private entity. Bringing business to the SSC and Highlands Museum increases the need for broadband in this region.

Kien's Company: I am assisting Kien Dang with his business startup. I am building his website through dropbox and finding which vendors would be best for his company.

Programming tutorials: In my free time I am doing some programming tutorials to bone up on my programming skills.

Tracking Satellites, CXBN work

- Monday 11/3/2014: 3 hours researching SBIR for kien
- Tuesday 11/4/2014: 3 hours C++ programming tutorials
- Wednesday 11/5/2014: 2 hours on Solidworks, 1 hour C++ programming tutorial
- Thursday 11/6/2014: 3 hours researching SBIR law for Kien

I worked 12 hours this week

November 10-15

I am currently working on researching the broadband initiative and working on the digital CricketSat with Bob Twiggs as well as the TubeSat initiative, both bring business and awareness to his small space business Teton. I'm also working on the destiny module that will be going to the Highlands museum. In the downtime I track satellites and work on enhancing my skill set.

- Monday 11/10/2014: 3 hours researching SBIR for kien
- Tuesday 11/11/2014: 3 hours C++ programming tutorials
- Saturday 11/15/2014: 8 hours at Kentucky Academy of Science presenting research

I worked 14 hours this week

Total Hours Worked: 26

Weekly Work/Status Report

Week November 2nd – November 8th

Current Assignments: Fusion Fitness, Center for Regional Engagement, RS Data Systems

Working Group: Rowan and Montgomery

Company Assigned: Print + Pixel

From: Shay Hammond

This week, I started on the Kentucky Health Center Network website, as well as Fusion Fitness. I also made some updates to the Turkey Trot site and Renfro Rock N Run site. I worked with Jessi from Print and Pixel Creative.

- On Monday November 3rd, 2014, I spent 3 hours creating the skeleton for the

Kentucky Health Center Network website.

- On Tuesday November 4th, 2014, I spent 1 hour updating the Turkey Trot site by removing their registration form (because the registration was closed) and gathering all additional entry information.
- On Wednesday November 5th, 2014, I spent 5 hours meeting with Jessi to discuss our projects and then working on the Fusion Fitness site. We decided to change the homepage design.
- On Thursday November 6th, 2014, I spent 1 hour working on the Fusion Fitness website.

I was able to work 10 hours this week.

Week November 9th – November 15th

This week, I attended a conference and worked with the Center for Regional Engagement to update the pages for the Kentucky Engagement Conference. I also worked with RS Data Systems to make their site live.

- On Monday November 10th, 2014, I spent 2 hours at the conference. I listened to Kevin and Jessi speak before I had to leave for class.
- On Tuesday November 11th, 2014, I spent 2 hours updating meeting with Karen Cornett to discuss the updates and then implementing them. They wanted to add an agenda page, as well as more information about the reception the night before the event.
- On Wednesday November 5th, 2014, I spent 6 hours meeting with Jessi to discuss our projects and then bringing the RS Data Systems site live. I also needed to make a few adjustments to the responsiveness to the site.

I was able to work 10 hours this week.

Week November 16th – November 22nd

I spent this week working more on the Fusion Fitness site as well as the KY Health Center Network site and the Renfro Rock N Run site. I also met with Jessi to discuss out projects.

- On Monday November 17th, 2014, I spent 3 hours working on the Fusion Fitness site. We had decided the site home page should look a little different.
- On Tuesday November 18th, 2014, I spent 1 hour making a small update to the Renfro Rock N Run site.
- On Wednesday November 19th, 2014, I spent 6 hours meeting with Jessi to discuss our projects and then working more on the Fusion Fitness site.

I was able to work 10 hours this week.

November 24-26

This week, I began researching and creating theme boards for a new site I will be working on with Jessi for Mt. Sterling Pediatrics. I made a few updates to the Fusion Fitness site. I also met with Jessi to discuss all of our projects.

- On Monday November 24th, 2014, I spent 4 hours creating two theme boards for a new site we will be working on, Mt. Sterling Pediatrics.
- On Tuesday November 25th, 2014, I spent 1 hour adding new content to the Fusion Fitness site.
- On Wednesday November 26th, 2014, I spent 5 hours meeting with Jessi to discuss our projects and then researching more for the Mt. Sterling Pediatrics site.

I was able to work 10 hours this week.

Total Hours Worked: 40

Kristen Royse
Week of: November 10 – November 9, 2014

I am currently building a workshop on mobile app development. The workshop will consist of a pre-class to gain interest, and a core class which will cover the basic of building an application. The Workshop building has been broken down into developing steps. Content, outreach, advertising, deciding a date, and making it happen. Meanwhile, I am still attending SolidWorks classes and enhancing my skills regularly. I am also going through programming tutorials so that I can better help clients that are in need of website development. This week particularly, I volunteered to be present at the November 10th conference here in Morehead.

Projects:

SolidWorks: SolidWorks is solid modeling CAD software that runs on Microsoft Windows. SolidWorks is currently used by engineers and designers at over 165,000 companies worldwide. The software is used frequently by engineers to model new, and to enhance current satellite designs, and even specific parts of a satellite. What is built on SolidWorks can be taken and actually built inside of a machine shop. Kevin Brown at ConsiNet who I am working under currently feels this CAD software would be beneficial for me to learn as an introduction to satellite and software design. SolidsWorks can be used to design radios, which is what his small business is based around.

Tutorials: HTML is a standardized programing language that is used for tagging text files to achieve font, color, graphic, and hyperlink effects on World Wide Web pages. It's the most common language used in website development. **C++** is also a very general programming language. It has imperative, object-oriented and generic

programming features, while also providing the facilities for low level memory manipulation.

- Monday 11/10/14: 2 hours at the Conference
- Tuesday 11/11/14: 3 hours working on SolidWorks and Web Assessment
- Thursday 11/13/14: 3 hours working on HTML and C++ Tutorials
- Friday 11/14/14: 2 hours working on HTML and C++ Tutorials

I worked 10 hours this week.

November 17 – November 23, 2014

I am currently building a workshop on mobile app development. The workshop will consist of a pre-class to gain interest, and a core class which will cover the basic of building an application. The Workshop building has been broken down into developing steps. Content, outreach, advertising, deciding a date, and making it happen. Meanwhile, I am still attending SolidWorks classes and enhancing my skills regularly. I am also going through programming tutorials so that I can better help clients that are in need of website development.

- Monday 11/03/14: 2 hours working on SolidWorks
- Tuesday 11/04/14: 3 hours working on HTML/C++
- Thursday 11/06/14: 3 hours working on HTML/C++ and SolidWorks
- Friday 11/07/14: 2 hours working on HTML/C++ Tutorials

I worked 10 hours this week.

November 24-28

I am currently building a workshop on mobile app development. The workshop will consist of a pre-class to gain interest, and a core class which will cover the basic of building an application. The Workshop building has been broken down into developing steps. Content, outreach, advertising, deciding a date, and making it happen. Meanwhile, I am still attending SolidWorks classes and enhancing my skills regularly. I am also going through programming tutorials so that I can better help clients that are in need of website development.

- Monday 11/24/14: 2 hours working on SolidWorks
- Tuesday 11/25/14: 3 hours working on HTML/C++
- Wednesday 11/26/14: 5 hours working on Reports and HTML/C++

Total Hours Worked: 30 hours

Total Hours Worked: 40

Jeffrey Reed
Week of: Nov 1 - 7, 2014

This week I worked on trying to get node.js installed on our server to get bower.js and Chartist.js to work. Ran into some problems with the server and spent most of the week communicating with Edwin about how to get it working.

Projects:

Edwin Orange project name: Hope Rope Drug Project

We are taking data from the court systems in Kentucky about drug arrest and charges and using this to make graphs and maps showing the distribution of arrest in Kentucky.

Hours Worked:

- Monday Nov 3rd- 2 Hours. Talked with Edwin about how to get Chartist.js to work and how I could get logged on to the server.
- Tuesday Nov 4th – 3 Hours - Read the Node.js API documentation to ensure how we could get it installed on the server and not affect anything
- Wednesday Nov 5th – 2 hours – Read the Bower.js API to see if I could find a fix to our server problem
- Thursday Nov 6th – 3 hours- Communicated with Zane about how our database wasn't working correctly with his new code and how we were going to fix it.
- Friday Nov 7th – 3 hours – Created a free web server for Zane that has MySQL features and Cron Job features to better facilitate his coding. Wrote instructions on how to access the server and to get everything to work.

Week of: Nov 10 - 14, 2014

Went to the Conference on Monday and had the meeting with the Broadband supervisors. Worked with Zane to fix his server that he was having trouble to log on and how cron jobs work. Started to learn JSON and AJAX and started writing the code necessary to get AJAX and JSON to work on our server/

Hours Worked:

- Monday Nov 10- 4 Hours. Went to the Broadband conference and meeting. Had a small meeting with Zane afterwards
- Tuesday Nov 11th – 3 Hours - Started to write a sample JSON file that will help to produce the code needed for the website.
- Wednesday Nov 12th – 2 hours – Communicated with Zane about his server issue.Caught up on JSON and how it works.
- Thursday Nov 13th – 3 hours- Fixed Zanes server problem and started to learn the code necessary to get JSON and AJAX and Javascript to all work together in

harmony.

- Friday Nov 14th – 3 hours – Started to learn AJAX, spoke to Vicci about the all occasion flower project, wrote Weekly Status Report.

Total Hours Worked: 28

Weekly Work/Status Report

Week of: Nov 17 - 21, 2014

Spoke with Vicci about a new project for a client that has a foam insulation business. Continued to work on the Edwin Orange Hope Rope project.

Hours Worked:

- Monday Nov 17- 2 Hours- Worked with using AJAX/jQuery to parse the JSON file that I had wrote.
- Tuesday Nov 18th – 3 Hours - Had to do a refresh on JSON and how the files were structured.
- Wednesday Nov 19th – 2 hours – Worked on parsing the json file in the modX enviroment
- Thursday Nov 20th – 5 hours- Chatted with Edwin about how the code was going, mentioned concerns and complications, worked on the server.
- Friday Nov 21th – 4 hours – Installed some API's onto the server, chatted with Edwin about an API that could help us with the parsing and allegation of data in our Arrays, started to learn this new API.

I worked 16 hours

Week of: Nov 24 - 28, 2014

Spent all week learning Underscore.js and writing the javascript file that will parse the data from the database, put it into a JavaScript Object to an array, Converting the array to string, and adding the string into the chart.js API.

Hours Worked:

- Monday Nov 24th- 4 Hours- Learning the Underscore.js API and researching it's libraries.
- Tuesday Nov 25th – 4 Hours - Finished learning the Underscore.js, talked to Edwin about how I thought it could help. Started working on the final Javascript file to handle the data manipulation.

- Wednesday Nov 26th – 4 hours – Continued to write the Javascript file to handle the data manipulation, had to refresh on some things, looped up more streamline ways to handle it.
- Friday Nov 28th – 4 hours – Wrote status reports and continued to write the final javascript file before debugging it.

I worked 16 hours

Cadence Payne
11/01/14-11/15/14

This week I worked on the following projects:

Client Work:

I am currently being trained to use the program SolidWorks with Dr. Kevin Brown at ConsiNet so that I may be capable of designing and assembling parts, through simulation, for need based purposes on future projects. Currently working on various Solidworks' projects assigned in order to gain the adequate experience needed to design the specific parts needed for Kevin and his business, Consinet.

Layout of my work for the dates listed above:

- 11/3/14: Solidworks. Working on fixing extrusions for installing GPS into boat. Also, working on design placement for the EPS board. (1 hour)
- 11/5/14: Solidworks. GPS finally mated and solidified in position! Finished designing actual EPS board, redesigned placement for EPS with new physical parameters. (2 hours)
- 11/10/14: Soldiworks. Boat finished! EPS board successfully mounted with extruded cuts applied to the physical board, as well as extruded mounts added to the base of the boat's body. EPS mated to mounts, all designs finalized. (2 hours)
- 11/15/14: Solidworks. Began planning design for NLV rocket. Started creating some of the subsections for the rocket. (1 hour)

In total I worked 6 hours for this pay period.

Cadence Payne
11/16/14-11/30/14

This week I worked on the following projects:

Client Work:

I am currently being trained to use the program SolidWorks with Dr. Kevin Brown at ConsiNet so that I may be capable of designing and assembling parts, through simulation, for need based purposes on future projects. Currently working on various Solidworks' projects assigned in order to gain the adequate experience needed to design the specific parts needed for Kevin and his business, Consinet.

Layout of my work for the dates listed above:

- 11/17/14: Solidworks. Continued overall planning for NLV rocket as well as continued working on individual subsections. In the process of mapping out all of the parameters for the subsections for an easier creation process of the individual pieces. (2 hours)
- 11/19/14: Solidworks. Continued process described on the 17th. Modified 2U Cubesat previously design to fit the desired 3U parameters. Working on designing body of outer shell of rocket. (2 hours)

Total Hours Worked: 10

Zane Dixon
Week of November 1-8, 2014;

I didn't get many hours in, due to the amount of class work during the week, however I did get some time to build an algorithm that could parse data, into the categories we needed locally, now need to figure out how to do it using Edwin's database.

Project – Edwin Orange:

November 5th 2014, 5:00PM-10:00PM

Created the algorithm to parse the data into the proper categories, for a local connection, we still need to figure out how to do this over Edwin's database.

Weeks of November 16 - 22, 2014

This week, I only had time to work on the project for just one afternoon, however it was productive, I force fed data through a txt file to see if the retrofitted program would work. Also Jeff fixed the website for the cronjob so that I would have access to it.

Project – Edwin Orange:

November 17th 2014, 6:00PM-11:00PM

I ran a modified program with the retrofitted program's sorting algorithm to see how the data was sorted, however only about 90% of the data I pushed got through to the end of the program, so either I made a spelling error or some data is not getting passed. Regardless this is still valuable information.

Week of November 22 - 30, 2014

This week, I touched up on some minor things in the retrofitted code, to try to get it to be implemented properly onto Edwin's CronJob, and the test database Jeff made for me, with Thanksgiving so close, I was only able to work on it late at night.
Project – Edwin Orange:

- November 26-27th 2014, 10:00PM- 2:00AM I modified the code to be implemented for our database, I tried to get it to run, however my satellite internet made everything time out, so I couldn't upload anything.
- November 27-28th 2014, 11:00PM – 1:00 AM I modified the sorting algorithm to the point where I believe it can sort about 99% of the data, so long as it connects, I tried to upload the program to the database that Jeff gave me, and still had no luck due to slow connection speed.
- November 29th 2014, 12:00AM – 1:00 AM I prepped the code to be sent to Edwin, with no database testing. When I get back to campus, I can further test it on our database, however with slow connection speeds at home, I will just have to send it to Jeff and see if he likes the code.

Total Hours Worked: 17

Daniel Yeary
11/2/14 - 11/9/14

- 11-8 - Worked on Blastzone Vapez website design and entered in data about products and prices (6 hrs), Emailed Emily from Highlands museum (15 min), Talked with Mike Wilkerson from Blastzone on the phone (30 min)
- 11-9 - Worked on Blastzone Vapez website by entering data about products and prices (2 hrs)

11/9/14 - 11/16/14

- 11-10 - Called BigCommerce about questions for the website with Blastzone Vapez (30 min)
- Talked with Mike Wilkerson from Blastzone on the phone about corrections to the website (1 hr)
- 11-11 - Worked on Blastzone Vapez website by entering data about products and prices (3 hrs)

- 11-15 - Entered prices and products for Blastzone Vapez site (4 hrs)
- 11-16 - Talked with Mike Wilkerson about website (30 min), Worked on website (2 hrs)

Total Hours Worked: 18

HQ Report: Final prep for and execution on annual conference. Continued supervising interns. Coordinated schedules. Tracked and maintained hours. Ensured payroll. Worked w/ NKU to monitor progress for web development project. Monitored and approved pay. Coordinated working groups and client activity. Phone calls and emails w/ OBOD and W. Bates. Organized additional workshop on coding.
Total Hours: 70

NKU Report: Continued web development work. Identified remaining two clients to receive web development assistance. Began web site development and work.
Total Hours: 30

DECEMBER 2014 REPORTS:

HQ Report: Finalized work w/ interns. Evaulated interns as per HR/Work Study policies. Ensured payroll and supervision. Coordinated final reporting.
Total Hours: 90

NKU Report: Final invoiced MSU. Continued web assistance for clients.
Total Hours: 20

Appendix IV
Resource/Contact Lists

Potential Clients and Partners:

Name	Organization	Email	Phone
Mike Bryant	Mill Creek Software	mike@mikebryant.com	606-272-2894
Jessica Robinson	Print + Pixel Creative	jessi@printandpixelcreative.com	859.398.3346
Edwin Orange	Edwin Orange	edwin@edwinorange.com	502-320-1076
Patrick Collins		jpatrickcollins@gmail.com	
Sharon Staviski	RS Data Systems	sstaviski@rsdatasystems.com	606.759.7141
Ellie Roberson Puckett	Space Tango	epuckett@spacetango.com	
Robert Twiggs	Teton Aerospace	rjtwiggs@gmail.com	606-783-9594
Kevin Brown	Cosinet	kbrown303@gmail.com	
Linda Oakley	All Occasion Flowers		606-743-2522
Mike Wilkerson	Blastzone Vapes		(606) 359-1564
Jen Carter	Space Prep	jencarter@spacetrek@gmail.com	312-873-1462
Paul Lyons	Radio Hitchhiker	radiohitchhiker@icloud.com	
Nate Lewis	Adena Productions, LLC	adenaproductionsllc@yahoo.com	
Stephen Schutts	Impact Signs & Grafix		606-796-0443
Lisa Fannin	Mt. Telephone		606-743-3121
Patty Kennard	Vanceburg Depot Museum	pkennard@windstream.net	606-793-0238

Kentucky Proud Contacts:

Name	Farm	Address 1	Address 2	Phone
Richard and Linda Miller	Gofland Hollow Farm	369 Pond Lick Road	Morehead, KY 40351	606-783-7225
Robert Razon	Farmacy Farm	5624 Flemingsburg Road	Morehead, KY 40351	606-783-1131
Kenneth and Debbie Whitt	Green Oaks Farm	PO Box 757	West Liberty, KY 41472	606-743-7070
Ruth Burke	Burke Farm	30 Highway 1950	West Liberty, KY 41472	606-725-4771
Kelly and Tonya Nickles	Bryant Fork Shorthorns	489 Bryant Fork Road	Ezel, KY 41425	606-725-4446
Arlie Smith	Clifty Point Acres	8837 Highway 711	West Liberty, KY 41472	606-743-4908
James E. Perkins	Perkins Farm	390 Perkins Ridge Road	Clearfield, KY 40313	606-784-6545
James Lacy	Lacy Farms			606-662-4161

Broadband Providers EAST

Outreach Name	Contact Name	Phone	Email
Access Cable Television	Roy Baker	606-772-0003 / 606-305-4573 cell / 606-677-2444	roy@accesshsd.net
Altius Broadband	James F "Jim" Connor, President	410-667-1638	jconnor@altiuscomm.com
Barbourville Utility Commission	Jason Valentine / Brad Shields / Josh Callihan	606-545-9206 / 606-546-3187	bradshields@gmail.com; jasonv@barbourville.com; joshc@barbourville.com
Bardstown Cable	Jeff Mills, City Electrical Engineer	502-348-5947 office / 502-249-1037 cell	jmills@bardstowncable.net
Big Sandy Broadband	Paul D Butcher	606-789-3455	paul@bigsandybb.com
BluegrassNet	Thomas Gallo	502-589-4638 / 502-797-1484 cell	tpg@bluegrass.net
BlueZoom WiFi, Inc.	Shane Casey Sonny Ransdell Florentino / Jason Bagan	859-733-1212 / 859-265-1668 / 859-733-9709	sales@bluezoomwifi.com escasey@bluezoomwifi.com
Brandenburg Telephone Co./Telecom	Kelly Roberts	270-422-2121	kroberts@bbtel.com; btcmap@bbtel.com
Broadlinc Communications, LLC	Dave Barker (owner)	859-409-2189	dave@broadlinc.com
City of Williamstown, Cable & Internet Service	Roy Osborne / Chuck Hudson	859-824-3633	rosborne@wtownky.org
Coalfields Telephone Company	James O. Campbell, CPA CFO	606-478-9401	jcamp@mis.net
Community Telecom Services	Dale Hancock	606-875-4177	
East Kentucky Network (Appalachian Wireless)	Allen Gillum (cc) Teresa Apel (cc)	606-477-2355	wagillum@ekn.com tapel@ekn.com
Eastern Cable (2Geton Net, Inc.)	Derek Eubanks	606-258-1150	cable@2geton.net; webmaster@2geton.net
Foothills Telephone Cooperative	Tom Preston - GM	606-297-9118 / 606-297-3501	
Frankfort Plant Board	John Higginbothm	502-352-4470 direct / 502-352-4505 / 502-352-4372 Main	jhigginbotham@fewpb.com
Harlan Community TV	Jack B Hale, President and G.M.	606-573-2945	
Inside Connect Cable, LLC	Anthony (Tony) F Manley, General Partner	502-543-7551 / 502-593-5357 cell	tony@insideconnect.net
Inter Mountain Cable	James O. Campbell, CPA CFO		jcamp@mis.net
Irvine Community Television Inc	Jim Hays, Exec. VP		jhays@irvineonline.net
Ken-Tenn Wireless	Eric Frilling	731-885-4000 / 888-880-1984	info@ken-tennwireless.com
Kentucky Ridge Country (KRCC)	Ron Reimer	859-226-9154 / 502-484-9975 / 859-333-7694 cell	ron@mykrcc.com
Kentucky WiMAX	Greg Ballard	859-583-8702 859-236-8503	greg@kywimax.com gballard04@gmail.com
KUDU Systems	Steven Vagasky	859-339-9666	vagasky@kudusystems.com
KYWiFi	Rick Gunderson	859-274-4033	rick@kywifi.com
Liberty Communications, Inc.	Scott Vogeler		ScottVogeler@LibertyBB.com

Lumos Networks (acquired FiberNet)	Mark Jackson	540-941-4831 540-946-2000 (Corporate #)	jacksonrm@lumosnet.com
Lycom Communcations	Steven J Lycans	606-826-1005 606-638-3600	steve@lycomonline.com
Mediacom	Anna Sokolin-Maimon Dale Haney Bruce Gluckman (legal)	845-695-2600	amaimon@mediacomcc.com bgluckma@mediacomcc.com
Megapath	Katherine K. Mudge (Director, State Affairs & ILEC Relations) Paula Ornelas (Paralegal - Regulatory) Schula Hobbs (Regulatory Affairs)	512-514-6382 / 408-952-7394 (Katherine) 203-284-6276 / 203-284-6100 (Shula)	kmudge@megapath.com Schula.Hobbs@megapath.com
MEGA-WI	Chris McDaniel		
Mikrotec CATV	James O. Campbell, CPA CFO		jcamp@mis.net
Mountain Rural Telephone	Rick Pelphrey	606-743-3121	
North Central Communications	Johnny L. McClanahan (legal) / Jeremy E Graves, Marketing Manager	615-688-6419 / 615-666-2151	johnny.mcclanahan@nctc.com
NTELOS	Amber Benson	540-946-8659 / 540-946-1890 / 540-241-3578	bensona@ntelos.com
Peoples Rural Telephone Coop Corp	Keith Gabbard, General Manager	606-287-0050 / 606-287-7101	kgabbard@prtcnet.org
Q-Wireless	Don Sickman 812-759-7700		randolph@evansville.net don.sickman@qwirelessbb.com don.sickman@norlight.com phil.lambert@qwirelessbb.com
Shelby Broadband	Chuck Hogg	502-722-9292	chuck@shelbybb.com
Limestone Cablevision/Bracken Cablevision (formerly Standard Tobacco Company)	Jeff Cracraft, Treasurer	606-564-9220	jcracraft@maysvilleky.net
StarBand		800-4STARBAND	
TDS Telecom	Jeff Handley / Bruce H. Mottern - Manager-State Government Affairs-KY, OH & TN	865-671-4753	bruce.mottern@tdstelecom.com
Thacker-Grigsby Telephone	David Thacker (cc) Robert C Thacker	606-785-2213	d.thacker@tgtel.com r.thacker@tgtel.com
Time Warner Cable	Julie Laine	212-364-8482	julie.laine@twcable.com
T-Mobile	Bill Haas Garnet Hanly; Dan Menser	425-378-4000	william.haas@t-mobile.com garnet.hanly@t-mobile.com; dan.menser@t-mobile.com
TVS Cable	Kenny Salmons - Technical LD Calhoun - Registrant and Administrative	606-785-3450 x 7105	kenny@tvscable.com
tw telecom of Kentucky	Carolyn Ridley (VP Reg)	615-584-7372	Carolyn.Ridley@twtelecom.com
Verizon Corporation	Sonya R Dutton, Regulatory	201-819-6262 / 770-797-1070	
Vortex Wireless	Roy Helm (owner)	270-866-1734 cell / 270-866-9477 office	royhelm@vortexmail.com
Windstream	Jeanne Shearer / JT Meister	717-738-8169 / 717-201-3537 cell / 501-748-5619	Jeanne.Shearer@windstream.com

		(JT)	
WK&T Telecommunications	Trevor R. Bonnstetter, CEO	270-247-4350	tbonn@wk.net
World Wide Gap	Larry Grandey	606-248-4446 / 606-499-0834 cell	larry@wwgaptel.com
Alltel Communications, LLC	Sonya R Dutton, Regulatory	770-797-1070	Network.Regulatory@verizonwireless.com
CNI Wireless, Inc.	Roy Taylor	606-679-8917	cniwireless@aol.com
Crystal Broadband Networks		630-206-0447	email not working - sales@crystalbn.com
Egan Technology Services	Jacob Egan		jacob.egan@egantechnologyservices.com
Hazard Television Co Inc	William "Bill" D Gorman, Jr., Vice President	606-436-3165	
Integrated Networks Services		606-324-8886	
Kentucky Computer Service (KCSMax)			
Kentucky Wireless Networks, Inc. (formerly KYWISP, LLC)			
Tri-Star Communications, Inc	Vernon D Engle, President	606-439-3305 606-439-6429	tri-starcomm@live.com
IgLou	Dean Brooks (GM)	800-436-4456	info@iglou.com
Kentucky OnLine, Inc. (KYOL)/Bardstown Internet Service	Jeff Lear	888-359-9444 x109	learjg@bardstown.com
Kentucky Telephone Company	Robbie or Joe	270-259-8504	robbiel@bgtelco.com
Kentucky Wireless	Joe	270-242-3600	email not working: joe@ky-wireless.com
Lightyear Network Solutions, Inc.	John Grieve (VP Regulatory) / Stephen Lochmueller (President) / J. Sherman Henderson (CEO)	866-406-7253	
MST Wireless	Thomas Peavy	270-699-5520 859-314-9400 (Tech)	peavy@mstwireless.net
WiMAX Express	Steve Hosner (Owner/Manager/Sales/Advanced Support)	606-879-4250 606-271-2448 cell	email not working - stevehosner@wimaxexpress.net
Axon Access	Bill	270-827-3480	support@kyonline.net
Blue One Communications, Inc.	Benjamin "Ben" Cottrill, President	859-219-1654	ben@blueone.net
Chapel Communications Inc.	Lee Murphy	859-623-1500	lee@chapel.us
City of Bellefonte	Ron Fraley, City Clerk	606-324-6035	Bellefonte@earthlink.net
ClearLinc	John Cain	859-935-1273	john@ClearLinc.net
EarthLink, Inc.	Kevin Brand / Cassandra Belinca Smith (secretary to Kevin)	404-815-0770	
Frank Howard TV Cable	Rick Howard	606-434-0222 606-349-3317	rick@howardsinternet.com
House Enterprises, Inc. (formerly Perfect TV)	Stella House	606-598-2292 / 606-598-7496	
Open World	Sondra Oliver / James	859-595-1136	sondra@openworldinc.com
Princeton Electric Plant Board	Cliff Harsey or Kevin Kizzee	270-365-2031	kkizzee@pepb.net cliff@pepb.net
QX.net	Alex Ball (Dir. Eng.) Chris Pemberton Zach Murray (president)	859-255-1928 x230	awball@qx.net

Win.net Internet	Michael Tague - President	502-815-7000 / 800-946-6382	tague@win.net

Broadband Interns

Aaron Ballard
Kristen Royse
Pamela Shay Hammond
Tiaunda Ramsey
Cadence Payne
Murphy Catherine Stratton
Kamille Onorato
William Roach-Barrette
David Mays
Kevon Jackson
Amber Dillon
Daniel Yeary
Zane Dixon
Jeffrey Reed

Appendix V
Workshop Reports

March 6, 2014: Business Model Canvas Workshop at Morehead State: The Business Model Canvas is a strategic management and lean startup template for developing new or documenting existing business models

May 10, 2014: "Working the Web to Build Your Business" Workshop at Alice Lloyd College in Pippa Passes, KY. Web development workshop with Print and Pixel Creative and Intern Shay Hammond.

August 26, 2014: App Development Workshop at Morehead State: Basic instruction in app development

September 16, 2014: App Development Workshop at Morehead State: Advanced Instruction in app development

October 4, 2014: Rural Up Coding Workshop: Coding workshop at Morehead State University for local high school children of Rowan County and beyond. Provided instruction in basic software languages, utility of languages, select applications.

October 24, 2014: ePREP- Entrepreneurial Prep workshop series to introduce high school students to high tech industries that utilize broadband. Film workshop in Campton, KY for high school and middle school students.

October 25, 2014: 2nd Rural Up Coding Workshop: Coding workshop at Morehead State University for local high school children of Rowan County and beyond. Provided instruction in basic software languages, utility of languages, select applications.

November 17, 2014: Second "Working the Web to Build Your Business" Workshop at the Campton Extension Office in Campton, KY. Web development instruction.

November 24, 2014: 3rd Rural Up Coding Workshop: Coding workshop at Wolfe County High School for local high school children of Rowan County and beyond. Provided instruction in basic software languages, utility of languages, select applications.

December 6, 2014: 4th Rural Up Coding Workshop: Coding workshop in Inez, Martin County, KY for local high school children. Provided instruction in basic software languages, utility of languages, select applications.

December 6, 2014: 5th Rural Up Coding Workshop: Coding workshop in Pikeville, Pike County, KY for local high school children. Provided instruction in basic software languages, utility of languages, select applications.

December 6, 2014: 6th Rural Up Coding Workshop: Coding workshop in Manchester, Clay County, KY for local high school children. Provided instruction in basic software languages, utility of languages, select applications.

December 6, 2014: 7th Rural Up Coding Workshop: Coding workshop in Somerset, Pulaski County, KY for local high school children. Provided instruction in basic software languages, utility of languages, select applications.

December 8, 2014: SpacePREP: Workshop in STEM education to include basic IT skills, robotics and more. Designed to spur interest in space science, EKY's strongest emerging IT based industry. This workshop was for students in Rowan and Menifee County.

December 10, 2014: SpacePREP: 2nd Workshop in STEM education to include basic IT skills, robotics and more. Designed to spur interest in space science, EKY's strongest emerging IT based industry. This workshop was for students in Montgomery and Fleming County.

Appendix VI
Annual Conference Info

Northeastern Kentucky and the Broadband Economy

Agenda

November 10, 2014

8:00 a.m. – 9:00 a.m.	Registration, networking, Continental breakfast
9:00 a.m. – 9:15 a.m.	Opening/Welcome
9:15 a.m. - 10:15 a.m.	Space Temp: Creating a Model to Use Students on a Temporary Basis to Staff Companies
10:15 a.m. – 10:30 a.m.	Break/Networking
10:30 a.m.-11:30 a.m.	Jessica Robinson: Web Development and Local Trends
11:30 a.m. – 11:45 a.m.	Break/Networking
11:45 a.m.	Lunch
12:00 p.m. – 1:00 p.m.	Dr. William Vartorella: Exploiting the New Space Economy: Cryptocurrency, CubeSats, and Atypical Consortial Alliances in a Rural Broadband Setting
1:00 p.m. – 1:15 p.m.	Break/Networking
1:15 p.m. – 2:15 p.m.	Kevin Smith of Rural Up!: Coding Academies
2:15 p.m. – 2:30 p.m.	Break/Networking
2:30 p.m. – 3:30 p.m.	Panel Discussion: The Potential for ISP's to Grow a Digital Economy: Increasing Demand for Broadband Services Panelists: Robin Proctor, William Bates, Johnathan Gay (Moderator) and representatives from Co-ops.
3:30 p.m. – 3:45 p.m.	Closing

Appendix VIII
Provider Outreach Report

ISP Conference

The Internet Service Provider (ISP) Conference was held in Morehead, Kentucky on March 18, 2014. In accordance with the mission of the Office of Broadband Outreach and Development, the conference was aimed at bringing together professionals in the industry and work with providers in an effort to promote the use of broadband across the region. While coverage continues to improve across the state, there are still many areas in the Appalachia region where broadband infrastructure is lacking and adoption rates for broadband are low.

In order to address the challenges facing both customers and providers in improving adoption and coverage numbers, attendees came from large providers, local cooperatives, and software design firms. Even as calls for regulation mount, companies are looking outside of government, focusing on how they can expand and improve. By hearing from contemporaries, attendees left with ideas and solutions that they can implement.

Attendees:

Steven Lycans, General Manager at Lycom Communications
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Reggie Easterling, Mountain Rural Telephone and Internet Cooperative

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William Lemaster, Fortune Management Group
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Tim Walker, Windstream Communications Internet Provider
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Shay Hammond, Intern with Digital Leadership Project
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Johnathan C. Gay, Kentucky Innovation Network at MSU
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Outreach for Annual Conference:

ISP personnel:

Broadband Providers EAST

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Altius Broadband	James F "Jim" Connor, President	410-667-1638	jconnor@altiuscomm.com
Barbourville Utility Commission	Jason Valentine / Brad Shields / Josh Callihan	606-545-9206 / 606-546-3187	bradshields@gmail.com; jasonv@barbourville.com; joshc@barbourville.com
Bardstown Cable	Jeff Mills, City Electrical Engineer	502-348-5947 office / 502-249-1037 cell	jmills@bardstowncable.net
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BluegrassNet	Thomas Gallo	502-589-4638 / 502-797-1484 cell	tpg@bluegrass.net
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Broadlinc Communications, LLC	Dave Barker (owner)	859-409-2189	dave@broadlinc.com
City of Williamstown, Cable & Internet Service	Roy Osborne / Chuck Hudson	859-824-3633	rosborne@wtownky.org
Coalfields Telephone Company	James O. Campbell, CPA CFO	606-478-9401	jcamp@mis.net
Community Telecom Services	Dale Hancock	606-875-4177	
East Kentucky Network (Appalachian Wireless)	Allen Gillum (cc) Teresa Apel (cc)	606-477-2355	wagillum@ekn.com tapel@ekn.com
Eastern Cable (2Geton Net, Inc.)	Derek Eubanks	606-258-1150	cable@2geton.net; webmaster@2geton.net
Foothills Telephone Cooperative	Tom Preston - GM	606-297-9118 / 606-297-3501	
Frankfort Plant Board	John Higginbothm	502-352-4470 direct / 502-352-4505 / 502-352-4372 Main	jhigginbotham@fewpb.com
Harlan Community TV	Jack B Hale, President and G.M.	606-573-2945	
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Inter Mountain Cable	James O. Campbell, CPA CFO		jcamp@mis.net
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Ken-Tenn Wireless	Eric Frilling	731-885-4000 / 888-880-1984	info@ken-tennwireless.com
Kentucky Ridge Country (KRCC)	Ron Reimer	859-226-9154 / 502-484-9975 / 859-333-7694 cell	ron@mykrcc.com
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NTELOS	Amber Benson	540-946-8659 / 540-946-1890 / 540-241-3578	bensona@ntelos.com
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Shelby Broadband	Chuck Hogg	502-722-9292	chuck@shelbybb.com
Limestone Cablevision/Bracken Cablevision (formerly Standard Tobacco Company)	Jeff Cracraft, Treasurer	606-564-9220	jcracraft@maysvilleky.net
StarBand		800-4STARBAND	
TDS Telecom	Jeff Handley / Bruce H. Mottern - Manager-State Government Affairs-KY, OH & TN	865-671-4753	bruce.mottern@tdstelecom.com
Thacker-Grigsby Telephone	David Thacker (cc) Robert C Thacker	606-785-2213	d.thacker@tgtel.com r.thacker@tgtel.com
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WK&T Telecommunications	Trevor R. Bonnstetter, CEO	270-247-4350	tbonn@wk.net
World Wide Gap	Larry Grandey	606-248-4446 / 606-499-0834 cell	larry@wwgaptel.com
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CNI Wireless, Inc.	Roy Taylor	606-679-8917	cniwireless@aol.com
Crystal Broadband Networks		630-206-0447	email not working - sales@crystalbn.com
Egan Technology Services	Jacob Egan		jacob.egan@egantechnologyservices.com
Hazard Television Co Inc	William "Bill" D Gorman, Jr., Vice President	606-436-3165	
Integrated Networks Services		606-324-8886	
Kentucky Computer Service (KCSMax)			
Kentucky Wireless Networks, Inc. (formerly KYWISP, LLC)			
Tri-Star Communications, Inc	Vernon D Engle, President	606-439-3305 606-439-6429	tri-starcomm@live.com
IgLou	Dean Brooks (GM)	800-436-4456	info@iglou.com
Kentucky OnLine, Inc. (KYOL)/Bardstown Internet Service	Jeff Lear	888-359-9444 x109	learjg@bardstown.com
Kentucky Telephone Company	Robbie or Joe	270-259-8504	robbiel@bgtelco.com

Kentucky Wireless	Joe	270-242-3600	email not working: joe@ky-wireless.com
Lightyear Network Solutions, Inc.	John Grieve (VP Regulatory) / Stephen Lochmueller (President) / J. Sherman Henderson (CEO)	866-406-7253	
MST Wireless	Thomas Peavy	270-699-5520 859-314-9400 (Tech)	peavy@mstwireless.net
WiMAX Express	Steve Hosner (Owner/Manager/Sales/Advanced Support)	606-879-4250 606-271-2448 cell	email not working - stevehosner@wimaxexpress.net
Axon Access	Bill	270-827-3480	support@kyonline.net
Blue One Communications, Inc.	Benjamin "Ben" Cottrill, President	859-219-1654	ben@blueone.net
Chapel Communications Inc.	Lee Murphy	859-623-1500	lee@chapel.us
City of Bellefonte	Ron Fraley, City Clerk	606-324-6035	Bellefonte@earthlink.net
ClearLinc	John Cain	859-935-1273	john@ClearLinc.net
EarthLink, Inc.	Kevin Brand / Cassandra Belinca Smith (secretary to Kevin)	404-815-0770	
Frank Howard TV Cable	Rick Howard	606-434-0222 606-349-3317	rick@howardsinternet.com
House Enterprises, Inc. (formerly Perfect TV)	Stella House	606-598-2292 / 606-598-7496	
Open World	Sondra Oliver / James	859-595-1136	sondra@openworldinc.com
Princeton Electric Plant Board	Cliff Harsey or Kevin Kizzee	270-365-2031	kkizzee@pepb.net cliff@pepb.net
QX.net	Alex Ball (Dir. Eng.) Chris Pemberton Zach Murray (president)	859-255-1928 x230	awball@qx.net
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Objective 1: Build Local and Regional Leadership and Capacity					
Component		**What**	**Initial Leadership**	**Other Stakeholders and Local Leadership**	***Total Deliverables:***
Ref #	*ACTION:*				
1a	Establish Regional Lead Body	Recruit & Confirm involvement and level of commitment	ADDs, Chamber of Commerce, Morehead ICC and Ashland IC, Ashland & Morehead SBDCs, NKU Infomatics	IT businesses, ISP's, Local gov., business, Chamber, Community Members	Completed: Approximately 50 hours working w/ regional lead body
1a.1	Orientation Sessions	Orientation sessions to regional lead body	Regional Leadership Group	IT businesses, ISP's, Economic Development Councils, City Council, County Magistrates, K-12 superintendents and principals	Held three orientation sessions: Two via webinar and a third in August in Morehead
1b	Find Funding Sources	Ongoing research/identification of funding sources -- public or private	Regional Leadership Group	Delegate as shared responsibility or form subcommittee from region volunteers or community work groups	Identified funding for 2015 to continue project goals via the Kentucky Innovation Network and the Center for Regional Engagment (approx. $10,000)
1c	Establish Working Groups *(Community Level)*	Recruit community leaders & stakeholders in target communities	Regional Leadership Group	Superintendents or principals; Business members; Chambers of Commerce; Others outside of gov.	Primary conduit for regional awareness. Performed more than 1,000 hours working within these regional working groups bringing awareness to the web and identifying businesses with whom the DLP could work.
1d	Organize a series of webinars or F2F workshops	Orientation sessions – for work groups, stakeholders and individuals to educate project participants, and raise awareness in support of local leaders to developing local broadband ADOPTION/UTILIZATION	Regional Leadership, Community Work Groups, KY Innovation Network, SBDC, tech companies, providers	K–12 Superintendents & principals; members outside of gov.	Organized more than 10 workshops in the region focused on expanding knowledge of broadband capacity, infarastructure and initiatives. Approximately 60 hours focused on these efforts.
1f	Train interns	Training assessment and design to create digital workers	MSU, NKU, Mike Bryant , KY Innovation Network, TechBase10, Community work groups	Local industry, county and city leadership	More than 200 hours of instruction and tutorials provided to student workers.

Objective 2 -- Improving Small Business Utilization of the Internet					
Component		**What**	**Initial Leadership**	**Other Stakeholders and Local Leadership**	
2b	Develop and maintain regional resources and a contact list	Reach out to vendors and resources w/invitation to be on list	Regional leadership and community work groups	Local small businesses, larger firms in area, tech providers, Kentucky Chamber of Commerce,KY Innovation Network, EKY SBDC's	Developed regional contact list and made frequent contact with these leaders. Approximately 100 hours.
2c	Organize & conduct educational presentations and workshops	Local delivery of group sessions to small businesses	Community Work Groups / Regional Leadership	Local utilities, local governments	Organized more than 10 workshops in the region focused on expanding knowledge of broadband capacity, infarastructure and initiatives. Approximately 60 hours focused on these efforts.
2c	IT-related work within identified small-to-medium sized businesses (SMB).	Business-IT assistance to small firms, prioritizing business categories.	MoSU, NKU, Mike Bryant,Community Work Groups / Regional Leadership	TechBase10, KSTC	Companies/people served: 20 companies Total Hours: 1,000
2f	Orgnaize Annual Conference	Focus on entrepreneurship, highlight Internet Service Providers (ISPs), Internet applications for business - cloud solutions, training, etc.	TechBase10, MSU, NKU and regional economic developers		Conducted in November. Planning Hours and holding conference: 50

Objective 3: Improving Broadband to Commercial and Industrial Areas					
	Component	**What**	**Who**	**Other Stakeholders & Local Leadership**	
3a	Identify standards for "competitive broadband"	Gather info -- industry stats, community business, regional providers	Working groups	Providers, Local Govt., Chambers, econ.develop. Local media, education sector.	Completed: NKU Project. Approx 100 hours
3b	Leverage the Provider participation on regional and ADD level working groups	*regularly discuss availability issues in community *solicit on-going input and communication with local business	Working groups	Providers with service in project area and others from region	Provider participation was extremely difficult to obtain. Spent approximately 40 hours on this effort.
3c	Determine fragmentation, concentration of demand, aggregate demand of potential business users & CAI's	Gather info on commercial areas' broadband to include current capacity, future needs	Working groups / Regional Leadership	Education sector – students	Completed: NKU Project. Approx 100 hours
3d	Leverage the Broadband Provider sub-committee	Leverage sub-committee: *regularly meet *discuss availability issues *solicit on-going input *input on information package	*OBOD, Provider Leadership	Provider Leadership, passing info down to community work groups	Attempted: provider effort was minimal
3e	Expand participation of current local internet initiatives to more communities	Build on initial project work, grow the number of participating communities, info sharing/collaboration, peer support, technical assistance	EKU, SOAR, KRADD & Working Group	Local Govt; K–12 superintendents & principals	Completed: Worked on business incuabator, space science economy, more than 10 workshops, etc. Total Hours: 1,000+